lishing the diagnosis. In order that this may be clearly appreciated I have divided all the cases into five groups, as follows:

1. Non-specific cases. As already stated these were fifty in number, with 100 per cent. negative reaction.

2. Cases in which there were lesions of a doubtful nature and a negative history for syphilis. Of the seventy-one cases in this group, seventeen, or 24 per cent., were positive and three, or 5 per cent., doubtful.

3. Cases in which there were lesions of a doubtful or suspicious nature and an indefinite history of syphilis. This group is made up of sixty-one cases, twenty-three of which, or 37.7 per cent., were positive and two cases doubtful.

4. Cases in which there was a definite history of syphilis but no lesions. Eighty-three cases, twenty-one of which, or 25 per cent., were positive and five doubtful.

5. Cases in which there were suspicious or manifest lesions and a definite history of syphilis. This is the largest group, with 113 cases, of which ninety-three, or 82.3 per cent., were positive and six doubtful.

It was also of interest to note in how many cases in which the patients had venereal sores, a positive diagnosis of chancres could be made with the Wassermann test, in the absence of all secondary manifestations. Accordingly sixty-one patients with sores of from two days' to ten weeks' duration were examined and the results tabulated.

RESULTS IN THE EXAMINATION OF SIXTY-ONE VENEREAL SORES

Duration of sores in weeks.......	1	2	3	4	5	6	7	8	9	10
Number of cases..................	11	14	11	11	2	5	3	2	1	1
Positives	3	6	6	7	0	2	0	1	1	0
Negatives	8	8	5	4	2	3	3	1	0	1

This table shows a steady increase in the number of positives from about 27 per cent. in the first week to about 64 per cent. in the fourth week, after which the number of cases rapidly falls off and the results are irregular. The importance of being able to recognize so large a number of chancres in the first week and practically all of them in the fourth week is obvious, but the table also shows that of the small number of venereal sores seen after the fourth week and unaccompanied by secondary manifestations such as a general glandular enlargement, over 25 per cent. may be chancres and can be diagnosed as such by this test.

Notwithstanding the fact that many of these patients had non-specific lesions, 42.3 per cent. gave a positive Wassermann. Of thirty-three cases in which the spirochetes had not been demonstrated, thirteen were positive. One patient had a positive Wassermann when first seen, four days after the appearance of the sore. An attempt was made to [illegible] cases in order to ascertain how
many of [illegible] with the negative reaction subsequently
[illegible] secondaries. This was attended with small
various rel [illegible] wever, only six patients returning for observa-
prop [illegible] with secondary manifestations. Of these,
diffe [illegible] s had been examined in the first week of the
imp tio two in the second week and one in the
F three [illegible] this last case the lesion had been
fixa primary [illegible] el powder from the outset.
the fourth [illegible] need hardly be stated that a positive
Ex treated wit [illegible] for practical purposes conclusive
lic [illegible] is of scientific interest that the
ne In conclusi [illegible] some non-syphilitic conditions
ex Wassermann te [illegible] et fever, and trypanosomiasis,
evidence of syphili [illegible] profound anemias, in none
test may be positive [illegible] confused with syphilis,
such as leprosy, yaws, sca [illegible] difficulty lies in the
tuberculosis, carcinoma [illegible]

correct interpretation of the negative results. convinced, may be met by careful attention to of the test; by the use of only the highe preparations, skillfully made and accurately ti by thorough familiarity with each step undert. amount of treatment the patient has receiv time elapsed since the last treatment was dis should be taken into consideration. When th in doubt one should not hesitate to make repea inations at convenient intervals. With thes tions, I consider a negative Wassermann reaci not of equal value with a positive result, a reliable.

II. THE VALUE OF SALVARSAN, BY J. T. G AND A. KEIDEL

This report is based on a series of seventy ca came under our observation and care in th Urinary Clinic of the Johns Hopkins Hospit private practice.

TECHNIC OF THE ADMINISTRATION

Except in the first four cases, all injections w intravenously into the median basilic, th cephalic, or one or other of the superficial radial veins. The needle was thrust directl the skin into the vein in almost all cases. E the vein was not plainly visible it could readil so by the application of a tourniquet, and was necessary in only a few cases on account of subcutaneous fat.

The salvarsan was dissolved in about 10 sterile salt solution in a sterile glass-stoppe and made alkaline with from 1.2 c.c. to 1. 4-normal sodium hydrate solution, and en solution added to bring the volume up to 240 c each 40 c.c. of this solution contained 0.1 gm. san. A glass-barrelled, 20 c.c. syringe provid two-way stop-cock and connections of sma tubing was used, and the injection preceded by a small quantity of salt solution.

Following the injections the patients were in the hospital for two days, and then were a resume their ordinary daily pursuits. As far as all patients have been kept under observation quent Wassermann tests made, in order that fai recurrences might be recognized as early as pc further treatment promptly instituted.

In the four patients treated intramuscularly tion to the drug was marked by most inten the site of the injection, accompanied by nausea, vomiting and headache. Following venous administrations, in some instances, th slight rise in temperature, but this lasted for hours and never exceeded 102 F. Owing to the intramuscular method was early abandone of the intravenous route, which was unacco local reaction, and did not incur the liability formation and painful indolent sloughs.

RESULTS

Of the seventy patients treated those in th stage, with chancres of from one to three week gave the best results. Only one dose was giv case, and the sore healed promptly. The res in this class of cases have been particularly inasmuch as no further manifestations of have appeared, although periods of from months have elapsed since the treatment.

Another group of cases in which the results seem to be very satisfactory is that in which the patients have received the drug following a vigorous course of mercury for periods of from a few months to a year, with the disease under control at the time. None of the cases in this group have so far recurred clinically, and in all that we have been able to follow serologically, the Wassermann reaction has remained negative. Some of the cases have been under observation now for six months.

Cases with active secondary or florid syphilis, however, although all of the lesions and clinical manifestations have promptly disappeared following the treatment, and in many cases the Wassermann has become negative, almost invariably recur at some later date.

In cases with the late recurring secondary and tertiary lesions, or in which more or less diffuse syphilitic processes are present in the body, an absolute eradication of the disease with one or more doses of the drug can scarcely be expected. In none of our cases of this type have we been able to accomplish permanent results with salvarsan alone, although a marked beneficial effect on the lesions has almost always been observed.

In one case of congenital syphilis, with severe double keratitis in a girl 12 years old, no benefit resulted from an intramuscular injection of 0.2 gm. of salvarsan. In one tabetic receiving 0.5 gm. of salvarsan the painful crises disappeared and remarkable improvement in the general condition followed.

In six cases which were followed in order to observe the effect on the *Spirochætæ pallidæ* in open lesions, the organisms were seen to disappear in from five to twelve hours.

COMPLICATIONS

In no cases have any untoward effects been observed directly attributable to salvarsan, with possibly one exception. In this patient ten weeks after the injection a palsy of the iris and accommodation in the right eye developed. The patient has been under treatment with potassium iodid, but the lesion is still present. A sufficient interval has not yet elapsed to make clear whether the palsy was syphilitic or caused by the salvarsan. In another case two months after injection, a paralysis of the external rectus of the right eye, such as is often seen in syphilis, was noted. The Wassermann reaction never became negative. The paralysis disappeared gradually under treatment with mercury and potassium iodid, so that it seems fair to assume that it was syphilitic in nature. No ear disturbances have been observed.

CONCLUSIONS

From our experience with this drug, we are convinced that it is an important addition to the therapeutics of syphilis. In almost every case in which visible lesions were present complete disappearance followed the injection and marked improvement in the general condition of the patient was a constant feature. In all cases refractory to mercury, the response to salvarsan has been prompt and striking. The drug is indispensable for the treatment of patients who do not tolerate mercury. A study of our statistics does not warrant us in expecting a complete cure of syphilis and absolute immunity from recurrences in the majority of cases after the use of only one or two injections. A small number of cases which have been followed by us for four or five months without recurrences justifies the belief that one injection of salvarsan will effect a complete cure in some cases. Salvarsan is without doubt of equal value with a long course of mercury and potassium iodid in the cure lesions. It has, however, the very great advantage simplicity of administration, and causes the lesions disappear with great rapidity. Moreover, it saves patient from the damage done by the luetic toxin dur the period necessary for the control of the disease b means of mercury.

We want particularly to emphasize the fact that use of salvarsan has now passed beyond the experiment stage. One should no longer make it his object to how much good can be done with one or more injectio of this drug, but rather of how much value it can made to assume in the treatment of syphilis when co bined with other drugs.

The superior ability of salvarsan over mercury to k rapidly the *Spirochætæ pallidæ* in the tissues has be demonstrated beyond question, and salvarsan is therefo indicated in every case of syphilis, when not special contra-indicated, even in those cases in which it see advisable to supplement it with the subsequent use mercury.

From our experience at present, we strongly advoc a vigorous course of mercury following the injection salvarsan, continued for about six months and possib then followed by another dose of salvarsan. In primary cases, and those already well under control wi mercury, it seems fairly probable that salvarsan may sufficient to eradicate the disease.

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THE DISADVANTAGES INCIDENT TO T ADMINISTRATION OF SALVARSAN *

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Salvarsan in its present form can never become popular remedy. Paul Ehrlich, however, is so inge that any day he may invent a modification that will more easily administered, and will be even less toxic.

There are three determinations of salvarsan that of fundamental importance; its poisonous action on *Spirochæta pallida;* its selective action on epithel tissue; and its selective action on the tissue of ne Its stimulating action on epithelial tissue is shown the marvelous way mucous patches and luetic ulc epidermize under its influence. Its selective action nerve tissue, however, is what immediately interests in this paper.

On the introduction of salvarsan, the attention observers was fixed on the optic nerve, as it was fea that salvarsan might, like atoxyl, cause amaurosis. experience accumulated, and as no reports of disag able ocular symptoms were at first recorded it was ho that at last an arsenic preparation had been disco which had no attendant grave toxic disadvantage. S later experience tends to show, however, that salva is not entirely free from poisonous influences on nerves in the orbit. Finger was among the first to d attention to these, but the instances reported are so typical as those from atoxyl and arsacetin. They been observed very infrequently, and it seems often be a question whether they are owing to syphilis, salvarsan, to a previous treatment with atoxyl, or some other cause. It must be remembered that the and the interest aroused by the new drug have indu thousands of old syphilitics to apply for treatment for all sorts of chronic ailments not necessarily caused by syphilis at all, and that among these old ambulatory pathologic museums there would necessarily be a great number suffering from ocular disabilities.

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* Read in the Section on Practice of Medicine of the Ame Medical Association, at the Sixty-Second Annual Session, hel Los Angeles, June, 1911.

But while attention was fixed on the eye, the ear seems to have suffered, as since the introduction of salvarsan an unusual number of troubles with the vestibular apparatus have been observed in early syphilis. It would seem that the arsenic in salvarsan acts true to kind and that we cannot entirely escape the predilection of this metal for nervous tissue. Implications of other nerves have also been reported, but, of course, of infinitely less consequential gravity. In any fair consideration of the detrimental effect of salvarsan on the nerves, however, we must always take into account the patients with whom we are dealing. Besides having syphilis, which itself attacks the nerves, they, as a class, habitually over-indulge in drugs that are strongly neurotropic, such as alcohol, tobacco, coffee and tea, and in addition put their nervous systems to the hardest kind of use, such as exposing the eye night after night to strong electric lights.

It is most interesting to consider for a few moments the selective action of arsenic on the nervous system. Arsenic has been used by therapeutists for ages as a nerve tonic, and although this experience has not the definiteness of a laboratory experiment, it, nevertheless, has value as indicating this metal's neurotropic nature. Accumulated clinical impressions always have a value. Furthermore, the marvelous action of salvarsan as a tonic is common to it and to the other arsenic preparations, and is probably due to its combined stimulating effect on epithelial and nerve tissue. The frequent occurrence of herpes zoster in those who are taking arsenic is another expression of the stimulating effect of this drug on the nerves. Then we have the selective action of atoxyl and arsacetin on the optic nerve, causing amaurosis. Furthermore, dentists constantly use arsenic to kill nerves. Arsenic has also been used for ages as a topical necrotizing agent in the treatment of epithelioma, and those who so employ it almost invariably come to the conclusion that the metal exerts a selective action on the diseased epithelial cells. At the same time, the atrocious pain that it causes when used on epitheliomas impels to the belief that the nerves at the same time are receiving special attention. The intolerable pain sometimes felt when salvarsan is employed, either subcutaneously or intramuscularly, is easily recognized by the experienced as the same kind of pain complained of by patients when arsenic is used topically in epithelioma.

Therefore, we recognize the neurotropic action of arsenic as a nerve tonic, as a herpetogen, as an amaurotic, as a nervocide and as a dolorific. Accordingly, it follows that when an unusual number of vestibular affections are reported in early constitutional syphilis, and therefore at a time of life, as well as at a stage of the disease, when such affections are rare, there naturally arises a grave suspicion that salvarsan may be the cause.

But the surprise lies in the fact that it is so little toxic. It is long since anything so dramatic as the introduction of salvarsan has occurred in the practice of medicine. The metal forming its main ingredient has played a romantic part in the world's history as a poison. Ehrlich, by combining this metal with other elements, changed at will its mode of action as regards this or that kind of animated protoplasm, so that it became almost indifferent even to its beloved nerve-cells and yet retained a strong affinity for the cells that constitute the virus of syphilis.

At present very few men rely solely on salvarsan in the treatment of syphilis. It is now used in conjunction with the two other great specifics, mercury and iodid of potash. On informing a patient that salvarsan is not an absolute specific for syphilis, clearing up the disease and all its manifestations at one stroke, it is interesting to watch the mental reaction that takes place. The patient almost invariably concludes that the remedy is worthless. Yet a medical man, for the sake of his own reputation, must tell the facts of the case. Furthermore, it is dangerous to tell a patient that he is cured, for then he is thrown off his guard in case further manifestations of his disease should appear.

Another feature tending to diminish the popularity of this remedy is the difficulty surrounding its administration. It cannot be taken by the mouth, and if given either intravenously, intramuscularly or subcutaneously, it has to be prepared with minute care, and the injection has to be carried out under the strictest antisepsis, as the drug itself is an irritant, but not an antiseptic.

Many drugs such as morphin and cocain are so bland in their action on the tissues that we never expect any local trouble to follow their hypodermic use. Others, while irritant and harmful, are at the same time antiseptic, and therefore the injured or necrosed tissues are not exposed to the additional danger of sepsis. One of the great points in favor of the administration of salicylate of mercury intramuscularly is that this particular preparation is slightly soluble and a good antiseptic, and yet so slowly soluble as to act almost as powerfully as an insoluble mercurial salt. Among the drugs used subcutaneously or intramuscularly, salvarsan is distinguished by its injurious action on the tissues, and often gives rise to local necrosis. K. Martius found that it did so in every case he investigated. Once, where the injection was thrown into the gluteal muscles, there was no tendency to heal, although three months had elapsed. In two instances the necrotic mass had to be excised.[1] Salvarsan, however, although it acts so injuriously, is not an antiseptic, and therefore if the technic is not perfect and germs happen to be included in the injection, they have an excellent opportunity to develop in the injured or helpless tissues. Septic infection, sometimes fatal, may therefore be a consequence of the administration of this remedy.

When salvarsan causes an arsenic necrosis that involves the whole skin, an ulcer results that is very slow in healing, and there is no telling when such an ulcer may develop. I have seen a patient get a necrotic ulcer from an injection of salvarsan who, several weeks before, had received an injection that passed off without any more than the ordinary inconveniences.

Then again, when salvarsan is given either subcutaneously or intramuscularly, the drug may not be absorbed. Schreiber had a patient, a doctor, who became so tired of the annoying deposit of salvarsan as to beg to have it cut out, and over 80 per cent. of the drug was removed from the local deposit. I have seen a number of these deposits, and the percentage of their occurrence must be quite high. In many instances they lie almost inert in the tissues causing pain only when pressed on, while in other cases they are very annoying. When the deposits are very annoying, the patient may ask to have the sac emptied, and the affair ends. When such a deposit is inert it is a question what to do with it; whether to leave it alone or to advise its removal. If left alone it might possibly give rise to arsenic poisoning by slow absorption, although I have never seen it do so. When the remedy lies unabsorbed, it, of course, does not act as an antisyphilitic, and may, if solely relied on to combat a progressive, destructive gumma, occasion serious loss of time. In other words, it constitutes a delay in treatment, possibly at a critical moment.

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[1] Martius, K.: Local Action of Salvarsan at Point of Injection, München. med. Wchnschr., Dec. 29, 1910; abstr. in The Journal A. M. A., Feb. 4, 1911, p. 388.

The intravenous method is undoubtedly to be preferred, as when the patient receives the dose, he has it then and there in sufficient quantity, and with little fear of any local trouble. But this way of administering salvarsan constitutes a surgical operation, demanding skill, intelligent care, and the strictest antisepsis, and more care and time indeed are here necessary than in many more pretentious operations. Above all things, an absolutely perfect solution must be obtained, as the injection of solid particles into the venous circulation is not permissible. So important is it to get a faultless solution that Schreiber always kept this step under his direct supervision. I never saw him give the actual injection into the vein, but I never saw an injection given in his clinic wherein he did not supervise the dissolving of the salvarsan. The greatest care is also necessary to keep adventitious particles out of the fluid. Sterilized distilled water should be used in making the solution, and no cotton should be employed in stoppering the bottles or in wiping the instruments lest cotton threads get into the fluid. The solution injected into the veins should not be a concentrated one, as it is an axiom that even harmless salts, when employed intravenously, should be well diluted. Furthermore, if by accident some of the salvarsan solution should escape into the subcutaneous tissues, it irritates far less when highly diluted than when concentrated. A concentrated deposit of salvarsan at the bend of the elbow where it may annoy for weeks is not pleasant.

Another important point in the intravenous injection is that the lumen of the needle should be free of rust. The blood in flowing out through a rusty needle is far more apt to clot than if the bore of the needle is smooth. This clot would naturally be injected into the vein in the course of the operation. I have also seen thrombus of the vein, presumably from the mere injury of the operation. The only symptoms were edema of the arm with some functional incapacity, and a cord-like hardening that cleared up in a short time.

An annoying feature, although a fleeting one, is the severe pain at the shoulder that patients often complain of after about 100 c.c. are injected. This may necessitate stopping the injection for a few moments in order to allow the circulation to readjust itself.

What is called a Herxheimer arsenical reaction may occur on the skin in the course of the first few days. It is a bright red erythema, usually best observed on the trunk, and I have never seen it give rise to any further disturbance. It is as well to know of its existence, however, as misunderstandings may otherwise occur.

The salvarsan reaction in the syphilitic lesions themselves is highly important. When, for example, there are a great number of very active syphilitic lesions, as in early malignant syphilis, the temperature reaction may run as high as 105 F. It is, therefore, important to be careful when there are many lesions, and when there is a low cachectic condition. I have never seen any deaths arise from this source, but at times there are serious inconveniences. In such cases Schreiber advises giving half the usual dose, followed in a week by the other half. Usually, the temperature reaction comes on quite early in all syphilitic lesions excepting those of the central nervous system. The temperature reaction in lesions other than those of the central nervous system occurs at about four or five hours after the injection, while in lesions of the central nervous system it occurs at about from eight to ten hours afterward. This difference is so regular in its occurrence that it may be used for diagnostic purposes. When no syphilis is present, no temperature reaction occurs. The experience of Schreiber is particularly interesting in this respect. Knowing how frequently arsenic is prescribed in psoriasis, and how excellent the results sometimes are, and knowing also that in many instances the favorableness of the result bears some relationship to the size of the dose, he hoped to achieve success in psoriasis by injecting salvarsan which contains such an enormous quantity of arsenic. The psoriatic patients injected showed no temperature reaction whatever, nor had the drug the least effect on the eruption.

There is not alone a temperature reaction in cases of syphilis in which salvarsan is injected, but there is a marked reaction in the lesions themselves. They become redder and more swollen. The drug acts in this respect somewhat like tuberculin in tuberculosis. As may readily be seen, this is an important matter when it comes to the question of administering salvarsan where the affected organ is of great dignity, as in cases of gumma of the heart or of the brain. If a patient has gumma of the brain, from which he is suffering severely from the pressure of the tumor, the sudden enlargement of this tumor, consequent on the local reaction, may be of the greatest importance. For the same reason, if a patient has gummatous softening of an artery, giving rise to an acutely dilating aneurysm, a dose of salvarsan by increasing the quantity of blood sent to the part may cause irremediable damage. The action of mercury and of potassium iodid is quite a contrast to this, as under these remedies there is no increased afflux of blood to the affected part, but rather a slow melting down of the syphilitic infiltration. Of course, in a patient suffering with aneurysm the drug would not be administered intravenously, as the fluid itself would dangerously raise the arterial pressure.

Finally we come to a disadvantage in the administration of salvarsan, which may count for nothing in an altruistic or scientific sense, yet from a practical point of view is of great importance. It is not a remedy to use in office practice or in an ambulatory clinic. The patient should be sent to a hospital, and this in itself constitutes an expense which many patients cannot afford. Even when given intramuscularly or subcutaneously, the administration of salvarsan consumes considerable time, and the physician's time counts for something. When given intravenously a very considerable amount of time is consumed, as the administration amounts to a surgical operation, making its administration still more expensive. This expense the patient might cheerfully undergo if the physician were able to assure him that his troubles would thereby be ended, but we are far from being in a position, even after several injections of salvarsan, to assure the patient that he is permanently cured. In the present state of our knowledge, we still are compelled to advise the patient, although he has taken salvarsan, to take mercury and potassium iodid also.

An enumeration of the disadvantages of this new drug serves only to throw into still bolder relief its great advantages. The wonder grows that such a powerful spirillicide can be thrown in such quantities into the circulation with such little risk to the host. In contemplating this marvel, we begin to appreciate the fine scientific imagination of the man who made this possible.

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ABSTRACT OF DISCUSSION

ON PAPERS IN THE SYMPOSIUM ON SYPHILIS

Dr. D. W. Montgomery, San Francisco: I agree with Dr. Fox that it is unnecessary to dissolve salvarsan in normal salt solution. It is best dissolved in warm distilled water. But salt solution should be injected into the vein before injecting the salvarsan solution, in order to make sure that the point of the needle lies free in the vein. The making of the salvarsan solution is a most important step. The solution should be perfectly clear. I never saw Schreiber give the actual injection, but on the other hand I never saw this drug administered in Schreiber's clinic when he did not himself personally superintend the making of the solution. One of the speakers has accentuated a fact that I think cannot be successfully disputed, that mercury is a true specific for syphilis and that it constitutes the best means that has yet been found for treating the disease. I also believe that iodid of potash is a specific for syphilis, although inferior to mercury. Mercury is a poison. This, to my mind, is as clear as any fact in therapeutics.

Dr. Howard Fox, New York: In our work at the New York Skin and Cancer Hospital we have observed one case of herpes zoster following the use of this drug. In the course of 128 injections we have not had any serious ill effects. In two of the cases the treatment was followed by a general toxic erythema, accompanied by high temperature, lasting three days. Necrosis at the point of injection occurred in five cases, twice after subcutaneous injections, once after an intramuscular injection of an alkaline solution, and twice after intramuscular injections of oily suspensions. I cannot agree with the previous speaker that the intravenous injection of salvarsan is a difficult or complicated procedure. With a little experience the proper introduction of the needle into the vein can readily be learned. It is hardly necessary to say in addition that the usual aseptic precautions should be strictly observed. In the interest of simplicity I think it best to use sterile water instead of physiologic salt solution for diluting the salvarsan. Furthermore, the gravity method is in my opinion much simpler than the method originally suggested by Schreiber. In the course of sixty-nine intravenous injections we have noted the appearance of small nodules in the vein in eight cases. In six of these cases the nodules disappeared very shortly after the injection.

Dr. W. J. Butler, Chicago: In regard to the treatment of the disease under consideration, I wonder if we all have similar ideas on this question. When is syphilis cured? I do not think that any of us can answer that question; I do not think that we can saturate a patient for two or three years and then say that the patient is cured; we all know that he is not cured. I agree with what has been said regarding the value of mercury; I can also see certain advantages that result from the administration of this agent hypodermically. How do you know when a patient is saturated? This we do not know clinically. Too much importance has been given in past years to the disappearance of external manifestations and their continued absence in judging the results of treatment of syphilis. The possibility of visceral syphilis existing or appearing at any time should always be kept in mind. I cannot emphasize sufficiently strongly the above points. If we ask ourselves when are these patients cured, we can only say, recollecting the possibility of recurrence at any time, they are cured when they are dead. We can, however, determine the activity or inactivity of the specific virus in a syphilitic by resorting to the serum reaction for syphilis. This is the only means of judging early activity of the specific process in internal organs, before clinical symptoms have manifested themselves. In the treatment of syphilis the serum reaction should not be applied for one, two or three months, or even years, but indefinitely as a control on the activity or abeyance of the disease. We should never assume that we can treat a patient with this disease for two or three years and then say positively that he is cured. The serum reaction should be resorted to when treating these patients to see that the treatment is being pushed sufficiently. We should never assume that a cure has taken place because there is a negative reaction. Such patients should not be allowed to go out of the care of the physician even when the serum reaction is negative after two, three or four years of treatment, but should occasionally receive further treatment to protect them against recurrences, and their blood should be examined three or four times a year. When found positive, treatment should be resumed.

Dr. C. F. Hoover, Cleveland, Ohio: During my student days I was profoundly impressed by an autopsy on a young man who died from pulmonary syphilis shortly after his return from Switzerland where he was sent six months before on account of an hemoptysis supposedly of tuberculous origin. Ever since that experience I have endeavored to avoid such a diagnostic error by always considering the possibility of syphilis whenever a chronic pulmonary disease is under consideration. Thus far I have seen only three instances of pulmonary syphilis in adults. That it does not oftener occur seems strange, but it seems more strange to me that our colleagues who practice in regions frequented by tuberculous patients have not a goodly number of cases of pulmonary syphilis to report.

Every variety of fever curve is encountered in syphilis. I remember one instance in which the rise from normal to 106 F. and return to normal was accomplished within a few hours. There were sufficient signs to show that the disease was located in the liver and on account of the extremely rapid rise and fall of temperature a diagnosis of suppurative pylephlebitis was made. This patient promptly recovered after mercury was given. Another patient with syphilitic fever (whom I saw through the kindness of Dr. Buswell of Buffalo) had relapsing fever for a period of fourteen years and during all that period never had more than ten consecutive days without having at least one or two days of fever. Recently a woman who was referred to the medical ward of Lakeside Hospital from the gynecologic service had a daily evening rise of temperature to 104 F. This patient was infected with syphilis ten years previously and had been often treated for some manifestation of the disease since that time. Within forty-eight hours after mercury was given in large doses all fever ceased.

I think the experience we have had with salvarsan has taught us that the proper method of employing mercury is to give large doses up to the point of tolerance for short periods of a few weeks. Lesser doses of mercury are probably harmful when long continued.

Dr. Harry Reeves Olliver, San Francisco: I have had one case of lung syphilis, in a young man 34 years old. He had been treated for six years for tuberculosis of the lungs. He had been sent to different climates. He had had hemorrhages, but no tubercle bacilli were ever found in the sputum. About six months ago he came to me to see if I could find any tubercle bacilli. He was very despondent. When in the laboratory I questioned him; he was asked if he had ever had syphilis. He smiled and revealed a perfect set of Hutchinson's teeth. The Wassermann reaction was positive. He was placed on mercury and the improvement was rapid. The radiographic plates showed pulmonary lesions. At this time salvarsan came into use and the patient was given injections, beginning them on January 8. The improvement that followed was remarkable. He gained 19 pounds in weight in three weeks; his gain was steady. The day after his first injection of salvarsan he did, however, have a hemorrhage. So far as I can determine he is now in perfect health. Subsequent *x*-ray examinations of the thorax have shown that the shadows have markedly decreased in size. This man had a sister with large glands over her body and I suggested that an examination of her blood be made. The Wassermann reaction was positive and I gave her salvarsan; within two weeks the enlarged glands had entirely disappeared, and she quickly gained in weight.

The mother of these two individuals was in bed with a very pronounced myocarditis. Her blood also gave a positive Wassermann reaction. On questioning her I learned that her husband had died with evidences of a brain tumor. I think that the history in this case was complete.

I have seen four cases of nephritis in which a very large percentage of albumin and granular and hyaline casts in the urine, general anasarca, ascites, etc., were present, and these patients all made a good recovery under the use of mercury and salvarsan. The first patient was to me of particular interest. She was a young woman with general anasarca, ascites, 1 per cent. albumin and with a tumor in the pelvis. I placed her on mercury and Epsom salts. The albumin dropped to 0.1 of 1 per cent. and the casts rapidly disappeared and she greatly improved. She was operated on by Dr. George B. Somers and an ovarian cyst was removed. Ether was the anesthetic used. After the operation she had considerable pain in the back and legs; this was supposed to have been due to this tumor. After the removal of the tumor, however, the pains continued. She was a frail woman and I hesitated to give her salvarsan. The pain continued so severe, with no relief in spite of the mercurial rubs, that I decided at last to give her salvarsan. Four-tenths of a gram was given and within twenty-four hours she had no pain; it is not three weeks since the injection was given and she has not had any pain since. The patient has remained well and gained in weight.

The second case was one that appeared in the medical clinic with sciatica which had persisted for fourteen years. There was a positive Wassermann reaction. The use of salvarsan entirely cured her in a few days.

With regard to what has been said about the dosage of mercury I agree entirely, the best and most lasting results being thereby obtained. As to the saturation guide, I think we should give the full dose for twenty days and then make a Wassermann reaction test. If this is negative we have probably reached the saturation point. We should then keep the dose of mercury at this point; but if there is any indication that there is not enough mercury given, the dose should of course be increased until the Wassermann reaction is negative.

In regard to salvarsan, the resulting reaction depends on the amount of infection before salvarsan was introduced. If a patient has but a mild infection, the quicker will he become negatived after the salvarsan injection. The more positive the reaction before the introduction of salvarsan, the longer will it take for him to become negative to the Wassermann reaction test. I think this is explained by the fact that a large number of spirochetes are killed and thrown into the circulation where their endotoxins give rise to the formation of antibodies. Consequently the more spirochetes present, the stronger will be the reaction and the longer the time required for their elimination from the blood.

Dr. Harvey G. Parker, Portland, Ore.: It is interesting to note the large sums of money advised to be spent in Wassermann tests during the treatment of lues, one of the speakers mentioning sufficient to count into the hundreds of dollars, at $25 per test; it seems to me the essential thing is to treat the patient very thoroughly and when satisfied that this has been done, after waiting a period of three months without treatment, try the Wassermann test; if negative, later try another. The more frequently early Wassermanns are disregarded and all effort placed on saturating treatment, the better permanent results we will get in treatment. In line with some of the cases reported of long standing hidden syphilis, undiagnosed, I wish to report a case. A patient came to the coast under the advice of his physician who pronounced him tuberculous. He had a severe cough, loss of weight, rapid breathing, and yet expectorated very little; he wandered about from place to place and finally, quite at the end of his resources, he arrived in Portland. He gave a history of a soft chancre eighteen years previously, and was satisfied that there had been no infection since. On general principles among the things resorted to to give relief from the severe cough was protoiodid of mercury; he got some relief but fell dead in a lodging house about this time. Post-mortem revealed a gumma of the arch of the aorta with the right lung also involved. The giving way of the arch caused death. In regard to some of the skin eruptions following the use of salvarsan, I have noticed two erythematous eruptions of a bullous type appearing after the injection, one after the second dose of the drug and aggravated after the third. In another case, on the third day after injection, there developed an itching, oozing eruption, somewhat like psoriasis in appearance as far as color and elevation go, in spots from a dollar to a half in size; at the end of three weeks under astringents it disappeared. I have given salvarsan in several cases in which there was an apparent idiosyncrasy against mercury; also in cases in which mercurial treatment had been long and carelessly used with practically no results, getting gratifying and rapid results with, so far, no bad results. I heartily speak for the intramuscular injection of salvarsan, especially in old cases, but always in conjunction with proper mercurial treatment.

Dr. William Litterer, Nashville, Tenn.: I take issue with the statement that salvarsan produced no reactions in cases other than syphilis. I have observed the use of salvarsan in five cases of pellagra, and in three marked reactions were obtained. In one the reaction was very severe, the temperature going to 104 F. while in the other two the temperature reached 102 F. All gave negative clinical history as to syphilis as well as a negative Wassermann. I have also used salvarsan intravenously in two cases of sarcoma; in one only was there a slight reaction. The patient vomited twice the next day while the temperature was 100 F. The Wassermann test was negative. In two cases of psoriasis, salvarsan was given intravenously with the result that in one case the temperature went to 99.8 F. two days after its administration. The Wassermann test was negative. In the pellagra cases good results followed its administration in one case only. In all of the others the general nutrition was improved, but there was no permanent improvement. I should like to report a unique case, which I believe to be one in which Ehrlich's "therapia sterilisans magna" was attained. This patient gave a typical clinical history of chancre on the penis. *Spirochetæ pallidæ* were found in large numbers three days after the appearance of the primary lesion. The Wassermann was negative. The chancre was excised and the spirochetes were demonstrated in the tissues by the Levaditi stain. After the method of Iversen, an intravenous injection (0.5 gm. salvarsan) was given, followed four days later by another (0.5 gm.) intravenous, and five days later an intramuscular injection (0.6 gm.) by Lesser's method was given. No other antisyphilitic treatment was instituted. The patient felt perfectly well in every respect. Wassermann tests were made every month for ten months with negative results. Three weeks ago this patient developed another chancre on the penis, which came nineteen days after a suspicious intercourse. The chancre was typical in every respect and numerous spirochetes were found in the lesion. One intravenous of salvarsan caused its disappearance in two weeks. To my mind this is a case in which the first three doses of salvarsan produced a complete sterilization of all the spirochetes in the body. Ten months elapsed without the slightest symptoms and repeated negative Wassermann tests were always recorded. The appearance of the second chancre is a probable demonstration of an instance of Ehrlich's "therapia sterilisans magna."

Dr. George H. Aiken, Fresno, Cal.: I should like to say something from the standpoint of the general practitioner. I have been treating syphilis for over thirty years and have had a large number of cases. I feel somewhat humiliated in being told that I have really never cured a patient. I rise especially to ask the gentleman who says that no patient is ever cured to listen to the recital of this case: A young man 20 or 25 years old, having been treated for this disease for two years, marries a healthy young woman, who bears four or six children. These children grow up healthy and strong, they never develop any local or constitutional evidences of syphilis, and they are under observation constantly for over twenty years. What should be our conclusion in this case? Was this patient not cured?

Dr. William W. Graves, St. Louis: If there is anything the medical profession of this country is united on, it is the belief in the curability of syphilis; yet recent serologic investigation and more accurate clinical observations indicate that many individuals whom we have considered cured have not been cured at all, and this is true whether from our recognized specific or from the much lauded salvarsan. Aside from accurate clinical studies of the syphilitic, similar studies of his wife and his progeny further show the inadequacy of our therapy. During the last five years I have made what I have called comparative clinical studies of families in which the fathers were syphilitics; likewise of families in which the fathers were free from syphilis. These studies have shown what is everywhere recognized, that healthy parents beget offspring, as a rule, quite equal to themselves in physical and mental endowments. "A chip off the old block" is expressive of our expectation of the offspring of healthy parents. My studies of families in which the fathers were syphilitic have shown: first, the wives, like the husbands, are rarely free from some of the more subtle manifestations of syphilis, such as pupillary anomalies, sensory loss, arterial changes, pallor, alterations in reflexes, etc.; second, the offspring rarely compare favorably with either parent or with each other. These studies have further shown the infrequency of the heretofore recognized signs of congenital or so-called hereditary syphilis, such as Hutchinson's teeth, interstitial keratitis, deafness without otitis, joint, skin and mucous membrane affections. Now the absence of these signs is one of the main props to our belief in the curability of syphilis. When such signs fail in the progeny, we point to them as living examples of the triumphs of our therapy in the parents. Similar comparative clinical studies of a few families in which the fathers are tabetics or paretics or known syphilitics will prove to anyone who will take the time to make such studies the inadequacy of our therapy, and, at the same time, the evil effects of syphilis on the progeny. I wish to indorse all that has been said by Dr. Butler. We must look the issue squarely in the face and not be afraid to look more closely at the progeny and to make clinical studies of them and of their mothers. We consent to a syphilitic's marriage three, four or five years after his infection, provided he has had adequate treatment and no recent manifestations; yet no man can say when a syphilitic has had adequate treatment nor when he is cured. The repeated use of the Wassermann reaction indicates that not more than 35 per cent. are apparently cured, and more accurate studies of the syphilitic, his wife and progeny will show that he is seldom, if ever, cured. It is safe to say that not more than 10 per cent. of syphilitics who apply to the medical profession for treatment receive what is considered adequate treatment; so that Nature must take care of the 90 per cent., and comparative studies of families will show that she does it almost as well as we do. These studies have caused me to admire Nature's resources in the care of syphilitics and at the same time to believe that our hope for a cure lies neither in mercury nor salvarsan, but in prevention.

Dr. B. H. Orndorff, Chicago: I wish to relate the experience I have had with salvarsan. In a series of nearly 100 cases of syphilis intravenous injections of salvarsan were given and without any unfavorable symptoms. In nearly all of the cases the Wassermann reaction test was positive. I also gave salvarsan in three cases of leukemia. The first was a case of myeloid leukemia, with 450,000 white cells. The full dose was given. There were no beneficial or deleterious effects for about three months following the injection; then the patient had trouble with the auditory apparatus. This patient died one month later when he was totally deaf. The second case was one of lymphatic leukemia with 600,000 cells of the mononuclear type. Three weeks following the injection of salvarsan, this patient died, having slight auditory disturbances. The third case was one of chronic lymphatic leukemia; the white cells were less than 200,000. No advantageous nor deleterious results followed the injection of salvarsan.

Dr. L. S. Schmitt, San Francisco: The discussion has been somewhat apart from the subject of my paper, the laboratory diagnosis of syphilis. By using laboratory methods, particularly the dark-field condenser, one can corroborate the point made by Dr. Graves that the injection of salvarsan reduces the contagious condition of the initial lesion, and of the secondary syphilids within twenty-four hours. With regard to the point brought up by Dr. Butler, it is difficult to tell when a patient with syphilis is cured. In the examination of the serums of the offspring of syphilitics I have found positive reactions in a number when there were no clinical manifestation in the parents. In syphilis, with a return of the reaction one can anticipate a return of the clinical symptoms. To bring out a point made by Dr. Graves and Dr. Butler, I have in mind a patient who without doubt had syphilis; the Wassermann reaction made shortly before death was positive. The history brought out the fact that the primary sore dated back forty-one years before his death.

Dr. Frank Billings, Chicago: Visceral syphilis is very prevalent in the large cities, but is not much found in the country towns. There is no doubt that any man who has access to the big hospitals will find many cases of visceral syphilis, cases that have not been discovered previously. Dr. Hoover mistakes me when he states that I said I had never met with a case of pulmonary syphilis. I did say, however, that I had never seen cases that were called in the literature "interstitial forms of pneumonia of the syphilitic type." Such cases I have not seen. I believe Dr. Graves' statement is true, that probably a very small portion of people applying for treatment are properly treated. Therefore, late syphilitic lesions are presented to us. How many of you have cases of locomotor ataxia come for treatment and in taking the history you find that the patients have not had adequate treatment? How many of you have found locomotor ataxia develop among your own patients? I have practiced medicine over thirty years and I have seen many patients with visceral and nervous syphilis who have not been cured. Perhaps I have not cured these patients. Can any of you say that your malarial patients are cured? Yet I do not want our old friends and patients to believe that one suffering from syphilis will be condemned to an eternal attack of this disease. I believe enough in drugs to feel that mercury will absolutely cure syphilis. If I can keep patients long enough under observation, I believe I can prevent further signs of the disease appearing. I have had some experience with salvarsan chiefly in late syphilis. I have given salvarsan to thirty-three patients. I have repeated the dose in several patients. One patient received four doses. Three patients each received two doses. The results from the use of salvarsan have not been as good as from the use of mercury in my hands. In patients suffering from locomotor ataxia salvarsan seems to have an analgesic effect. Those suffering from the crises seem to be relieved in a few hours after receiving this agent. I recall one man who came from Milwaukee with a very severe neuritis of the brachial plexus; he had been confined to his bed for many months; the Wassermann reaction was positive. This patient was entirely relieved of his pain in eighteen hours and he was able to use his hand again within one week after the injection. I have seen many instances which show the analgesic effect of salvarsan. I believe in the use of mercury. As to what form of mercury to use I believe that is, to a certain extent, a matter of individual choice. During the last few years I have come to resort to the intramuscular method; I feel that I can command the dosage better in this way than in any other. I can keep my patients better under command. I think the value of mercury is greatly enhanced when the patient is absolutely at rest; this applies to any case of syphilis, whether primary or late. Mercury should be pushed to the point of saturation; this means at least to the point of salivation. I give large doses—as much as one-half a grain of corrosive sublimate; by repeating this again and again we conserve the best interests of our patients. I look on the iodids not as a specific in any sense, but as a helpful means of driving out the waste material. When we meet with gumma, for instance, the administration of the iodids will clear it up quickly as a rule, and without intervention from mercury.

Ointment Bases.—W. T. Corlett, in the *Cleveland Medical Journal*, calls attention to the importance of adapting the base of an ointment to the disease for which it is prescribed. If an ointment is intended as a vehicle for an internal remedy, the base should be absorbable, such as lanolin or lard. On the other hand, if the remedy is to act locally, a non-absorbable base should be chosen, such as petrolatum. In conclusion the author criticizes some of the ready-made ointments, especially those "made in Germany," which have been devised to replace the time-honored ointments of the pharmacopeia.

THE USE OF SALVARSAN*

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The preparation which is the subject of inquiry differs from most of the weapons given us in our combat with disease in that its discovery was not due to a lucky accident but was rather the result of a carefully worked out method of investigation.

Believing that for each specific parasite a specific curative drug could be found, Ehrlich set out to find a substance which should be parasitotropic to the *Spirochæta pallida* (that is, should enter into combination with the pathogenic organism), rather than organotropic (that is, capable of combining with the cells of the human body). The direction which his search should take in syphilis had already been indicated by the work with atoxyl that had been done by Uhlenhuth, who had found that that substance permanently cured the syphilis of rabbits. In the clinical use of atoxyl, its effects on the body had been found so dangerous that its employment had been nearly abandoned, but the efficacy of arsenic in the destruction of the spirochetes had been so firmly established that the problem with which Ehrlich had to deal was clearly defined. It was to find a preparation of arsenic which would enter into combination with the *Spirochæta pallida* without affecting the body. With a skill and patience that will ever serve as a model of scientific work, Ehrlich, aided by a number of assistants, engaged in his task and solved the problem to his satisfaction in the discovery of salvarsan. After numerous experiments on animals proving the efficacy of the remedy in experimental syphilis and its harmlessness for the animals treated, he distributed about 20,000 doses of the remedy gratuitously among scientific clinicians throughout the world, and when he received confirmation of his claims from these sources he gave his treatment to the world. The enthusiasm with which the new remedy was welcomed reminded one of the days following the announcement of the discovery of tuberculin by Koch, but unfortunately its extensive employment did not confirm completely the hope that in it we had a remedy, a single dose of which would completely annihilate the parasite of syphilis and cure all the symptoms it produced.

Hata, working with Ehrlich, investigated the mode of action of the drug *in vitro* by mixing solutions with blood containing spirilla diluted thirty to forty times with physiologic salt solution, and examining the solution after one hour to determine the motility of the parasites. Non-motility was considered to indicate their destruction. It was found that comparatively small doses of salvarsan sufficed to destroy the spirilla completely. The next step was the investigation of its effects on syphilis of rabbits, and here the results were most brilliant. It was found that doses of 10 mg. per kilo weight of the animal administered intravenously sufficed to destroy all of the spirochetes in the body, to remove every symptom of the disease and to prevent its recurrence.

These results have been confirmed by others so that there can be no question of their correctness. Hata found that this dose was one-seventh of the maximal dose which the rabbit would tolerate. The work that had been done in Ehrlich's laboratory showed that microorganisms readily develop immunity to some drugs which act on them. For example, if mice infected with trypanosomes receive an efficient dose of trypan-red, they are cured by one injection. If a dose slightly less than that necessary to destroy the trypanosomes be given, the latter disappear from the circulation for a while and then return. By repeating this treatment, a strain of trypanosomes was produced that was resistant to the largest dose of trypan-red that could be used and this resistance was transmitted to the trypanosomes for several generations. The same was found true of atoxyl.

Dr. Margarete Margulies found that trypanosomes could readily be made resistant to salvarsan, but that this resistance never occurred in the case of *Spirochæta pallida*: that after numerous injections of small doses, the vulnerability of *Spirochæta pallida* to efficient quantities remained unchanged.

DESCRIPTION

As is well known, salvarsan is dispensed as a light yellow powder in sealed glass capsules free from air, but containing the vapor of wood alcohol to preserve it from oxidation.

Salvarsan, dioxydiamidoarsenobenzol, is an acid substance which combines with alkalies to form monobasic and dibasic salts. It dissolves freely in water, forming a clear yellow solution. On the addition of a small quantity of alkali, it is precipitated as the neutral salt, which on further addition of alkali becomes dissolved as a basic salt. Using sodium hydroxyl, we have successively formed the monosodium and then the disodium compound. As has been shown by Michaelis, in whichever form the substance is introduced into the blood its solubility is never more than 0.001 per cent. and he believes that its relatively low toxicity is due to this slight solubility in the blood.

Salvarsan has been used in doses up to 1 gm. without serious effects. It has been calculated from the average animal dose (including that given the monkey) that a human being might be given 5 or 6 gm. at one injection without fatal results, but the actual test has not yet been made.

After about a year's trial of the new remedy, all observers, including Ehrlich himself, unite in believing that the hope Ehrlich expressed when he presented it to the medical world that a single dose would sterilize the body, destroying every spirochete present, is an illusive one. In a certain number of cases its effects have been magical, the symptoms of syphilis have rapidly disappeared and the spirochetes that had been present before in large numbers were no longer to be found. This is especially apt to be the case in the early stages. In by far the larger number of cases, however, such results were not observed. Indurations and glandular enlargements were found to diminish but slowly and to require repeated administration of the drug. Some cases were found to be absolutely uninfluenced by salvarsan, so much so that some authors have claimed that its efficiency is not greater than that of mercury.

ADMINISTRATION

In the administration of salvarsan three methods may be used: (1) intramuscular, (2) subcutaneous, (3) intravenous.

Numerous modifications of the details of administration have been suggested by various observers, but the most important ones are the following:

Wechselmann and Lange[1] dissolve the dose in sodium hydrate and precipitate by neutralizing accurately with glacial acetic acid. This neutral mixture is used for injection intramuscularly or subcutaneously.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

[1] Wechselmann and Lange: Deutsch. med. Wchnschr., July 28, 1910.

A slight improvement has been made in this method by sedimenting, pouring off the supernatant fluid and mixing the deposit with physiologic salt solution. Alt advised the use of an alkaline solution of salvarsan, the alkalinity being as slight as possible and the entire mixture not to exceed 30 c.c. for intramuscular injections.

Others, especially Michaelis, recommend still smaller quantities of solvent, not over 10 c.c., claiming that the pain produced is thereby diminished.

Some observers prefer the suspension of the neutral base in paraffin or other oil and believe that pain may thereby be avoided.

When the solution is used, stress is laid on avoiding excess of alkali. This may readily be done by adding not quite sufficient alkali for complete solution and then filtering through a sterile filter-paper.

In the intramuscular injection the gluteal region is usually selected. It is well to see that no blood flows through the needle before injecting the salvarsan. The injection should be made slowly and care should be taken that none of the fluid escape into the surrounding tissues.

Both the intramuscular and the subcutaneous forms of administration are followed by pain and induration. If the neutral substance be used, the initial pain is usually less than when the alkaline is employed, but the succeeding pain, according to most observers, is quite as intense.

With both intramuscular and subcutaneous injections, infiltrations set in which may last several weeks. These are accompanied by varying degrees of pain and some fever.

In the majority of cases the pain is so severe as to necessitate the use of morphin for several days. In addition to these local symptoms there is often headache, nausea, vomiting and diarrhea.

Intravenous injections of salvarsan should always be made with a perfectly clear, sterile, alkaline solution. Inasmuch as small particles of glass are always present from the breaking of the capsule, it is necessary that the solution be filtered. The intravenous introduction of the solution offers no difficulties whatsoever, if care be taken that the needle enters the vein and does not pass through its walls into the adjacent tissue. This is made evident by the free flow of blood through the needle, which must be observed before passing the solution through it. It is well to dilute the solution to 250 c.c. or 300 c.c. and to warm it up to about 110 F., for in flowing through the tubes it becomes cooled.

The caliber of the needle used should be sufficient to permit this quantity to flow into the vein in about fifteen minutes. Thus employed, the intravenous injection gives rise to absolutely no local symptoms. It occasionally, but by no means always, happens that the patient experiences some headache, slight fever with chill, severe sweating and more or less gastro-intestinal disturbance.

PHYSIOLOGIC ACTION

When salvarsan is injected intravenously, it rapidly appears in the urine. Aberlin[2] has described an easy method of demonstrating its presence. If a few drops of urine acidulated with hydrochloric acid, to 7 or 8 c.c. to which 3 or 4 drops of a 0.5 per cent. solution of sodium nitrite has been added, be mixed with 5 or 6 c.c. of a 10 per cent. solution of resorcin made alkaline with sodium carbonate, a red color develops. He has found salvarsan in the urine by this method two hours after its intravenous injection. Heuser[3] has found arsenic in the urine three months after intravenous and nine months after intramuscular administration. Bornstein,[4] experimenting on animals, found that a large quantity of the salvarsan injected intravenously did not remain free in the blood, but was deposited in the liver, spleen and kidneys with smaller quantities in other organs. He confirmed these findings on a man who had died from intercurrent infection fourteen days after an intravenous injection. He also found arsenic in the placenta of a woman who had received salvarsan.

When salvarsan is injected intramuscularly or subcutaneously, a considerable portion of it enters into relation with the tissues and forms a deposit of some combination of arsenic which may be present for a very long period.

The reports concerning the effects of salvarsan on the Wassermann reaction vary. In a number of cases, within a short time after its administration, the reaction, which was positive before, became permanently negative. In a far larger number of cases the negative phase lasted but a short time and was followed by a positive Wassermann. In some cases absolutely no effect was produced and in some instances a negative Wassermann reaction became positive. In the latter case there was undoubtedly development of antibodies from destruction of the spirochetes present.

A number of unpleasant effects of salvarsan besides the local pain, the fever, sweating, headache and gastro-intestinal disturbances have been observed. Some of these have been transitory, like the Herxheimer skin reaction, whereas others have been permanent. Surprisingly few fatalities have been recorded, when we consider the large number of patients who have been treated and the severe pathologic conditions that have been present in many of the individuals who have taken the treatment. Experience has confirmed the wisdom of the advice given by Ehrlich that it should not be used in severe cerebral disease, in arteriosclerosis and cardiac affections. It has also been advised that it should not be used in putrid bronchitis, in severe diabetes or in any condition in which the body has become much enfeebled.

Inasmuch as optic atrophy had been frequently observed after the use of atoxyl, it was deemed wise to consider the possibility of a similar result from salvarsan. Experience has not confirmed this fear. Optic atrophy has not been observed as having resulted from its use unless other arsenic preparations had been previously employed. Ehrlich distinctly advises against the employment of the drug when atoxyl, arsacetin or other arsenic preparations have previously been given.

A certain number of cases of affection of the brain and of the optic, acoustic and other cranial nerves had been observed after the use of salvarsan and had been looked on by various observers as a direct effect of the remedy. Dr. J. Benario,[5] however, reports from Ehrlich's institute the results of the study in this regard of the details of 14,000 cases in which salvarsan was used. Among these but 126 patients were found to have presented nervous symptoms, and of these nine were transitory, like the Herxheimer skin reaction that had been observed. Only a very small number (4.2 per cent.) of these were in the primary stage, but by far the largest number (88 per cent.) occurred during the early secondary stage before the ninth month. Of these symptoms nearly all developed within four months from the time of injection. Benario agrees with Ehrlich that these symptoms are not toxic, but that they are produced by syphilitic affections due to the action of spirochetes which had escaped, and calls attention to the fact that they usually occur in the early secondary stage, in which an extensive dispersion of spirochetes is observed. Alt[6] says that wherever syphilitic new formations or tissue changes are present, salvarsan produces a localized hyperemia with accumulation of leukocytes, a kind of inflammation. The arguments in favor of the syphilitic rather than the toxic origin of these nerve affections are:

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[2] Aberlin: München. med. Wchnschr., May 9, 1911.

[3] Heuser: Med. Klin., April 9, 1911.

[4] Bornstein: Deutsch. med. Wchnschr., Jan. 19, 1911.

[5] Benario: München. med. Wchnschr., April 4, 1911.

1. The long period elapsing between injection and the nervous manifestations.
2. The nature of the pathologic process which, as is best shown in the optic nerve, is an irritation and inflammation and not a degeneration as with other arsenic preparations.
3. The fact that they occur almost exclusively in the early stages of syphilis.
4. They have never been known to occur in non-syphilitic patients treated with salvarsan.
5. Their curability with salvarsan or other antisyphilitic remedies.
6. The fact that they occur almost only after small doses of salvarsan.
7. The fact that precisely the same symptoms occur after mercurial treatment.

Before the discovery of salvarsan Naunyn had already observed that 20 per cent. of the cases of cerebral syphilis occurred during the first year after infection, and Mauriac in 1890 reported similar observations. He estimated that one-third of the cases he had observed occurred during the first year. Careful statistics seem to show that cerebral symptoms are no more frequent since the use of salvarsan than before. Cerebral symptoms are more apt to occur in extragenital chancres and most frequently in the cephalic forms. Hoffman and Ehrmann have found spirochetes in the lymph-spaces of nerves, and it seems plausible that under such conditions these should pass directly into the cerebral structures. It has been observed that the first sign of cerebral syphilis is severe headache, indicating the invasion of the brain by the spirochetes, and this fact may be considered a guide to further vigorous treatment after the use of salvarsan in such cases. The nerves most frequently involved are the opticus, the acusticus, and less frequently the orbital nerves. These nerves run in firm canals in which the spirochetes may escape the circulating salvarsan, and in which slight syphilitic lesions or secondary hyperemia may give rise to evident effects through compression of the nerves.

An interesting observation was made by Ehrmann, who found toxic action on the acoustic nerve two months after an intramuscular injection of salvarsan. A gangrenous focus had developed which he excised. There followed improvement of the aural symptoms. In 5.69 gm. of the broken-down material he found 3.2 mg. of arsenic and he believes that the toxic effect was due to some modification of the drug in the muscular tissue.

A small number of cases of inquiry to the kidney following the intramuscular injection of salvarsan have been reported by Geronne, Jadassohn, Scholz, Mohr and others. In some of the instances the effects were merely transitory, consisting of suppression of urine, followed by the excretion of small quantities containing albumin and casts, whereas in others true hemorrhagic parenchymatous nephritis resulted. These observations seem to indicate that salvarsan undergoes modification in the muscular tissue, giving it toxic properties.

In the parasyphilitic lesions like tabes dorsalis, the effects of salvarsan have not been brilliant. In some cases improvement has been observed, but as a rule the results are negative. Possibly further observations and combinations with other remedies may lead to a change of opinion. Still it is quite doubtful that a destruction of the spirochetes will remove the degeneration of the nerve tissue which causes the symptoms of the disease.

It has been found that it is not safe to give infants with hereditary syphilis the salvarsan directly, as the immense quantities of the endotoxins which develop from the spirochetes killed are apt to be fatal in their effects. According to Taege, the milk of syphilitic women who have received salvarsan, however, is distinctly curative for such infants. Although Taege found no arsenic in such milk, the contrary observation was made by Scholz of Koenigsberg, so we are in doubt whether its curative effect be due to the arsenic or to the antibodies in the milk.

Jesionek[7] does not agree with Taege and Duhot in their observations. He found arsenic in the milk of syphilitic women who had received intravenous injections of salvarsan, using 100 c.c. of the milk in making the test.

A goat injected intravenously with 0.4 gm. salvarsan gave the arsenic reaction in the milk for a number of days, but the quantity was variable, being greater on the fifth than on the second day. Jesionek observed a violent eruption of fresh syphilids in two infants whose mothers had received intravenous injections of salvarsan. He believes that in the milk of the mother there was arsenic, syphilitic endotoxins as well as antibodies, and that the organism of the infant was overwhelmed with endotoxins from the mother and also with those derived from the spirochetes destroyed in the body of the child by the arsenic in the milk. He obtained better results by feeding a syphilitic child with the milk of a goat that had received an injection of salvarsan, and points out that we are by no means called on to accept the advice of Taege and Duhot that the infant should be fed with the milk of a syphilitic mother or wet-nurse who has been treated with salvarsan, but that on the other hand it may be found to be more advantageous to administer the remedy to goats or cows and to feed the child with milk from such animals. He suggests that the arsenic may undergo some modification in the body of the animal rendering it harmless, and that possibly other preparations of arsenic may have the same effect. These observations open up a large and promising field of exploration.

The attempt has been made to use the serum of human beings treated with salvarsan as a remedy for syphilis. Marinesco[8] injected a few patients with such serum, but his results were disappointing.

IN OTHER DISEASES

Besides being a specific for the treatment of syphilis, salvarsan probably destroys other forms of spirilla. This has been undoubtedly proved to be true in relapsing fever, in which the administration of a single dose intravenously has been followed by complete cure in a large number of cases, as was first shown by Iverson.[9]

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[6] Alt: Deutsch. med. Wchnschr., 1910, No. 10.

[7] Jesionek: Munchen. med. Wchnschr., May 30, 1911.

[8] Marinesco: Riforma med., Jan. 1, 1911.

[9] Iverson: München. med. Wchnschr., Aug. 16, 1910.

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THE CULTIVATION OF THE SPIROCHÆTA PALLIDA

During the past decade remarkable advances have been made in the placing of the pathology of syphilis on a sound basis. In 1903, Metchnikoff and Roux first demonstrated the experimental production of the disease by animal inoculation; two years later Schaudinn and Hoffmann announced the discovery of the *Spirochæta pallida,* since conceded to be the etiologic agent of the disease; and in 1906 Wassermann, Neisser and Bruck published the method of serum diagnosis with which we associate their names.

Schaudinn and Hoffmann gave excellent descriptions of the morphology of the *Spirochæta pallida* and detailed methods of demonstrating the organism in the secretions and in the tissues of syphilitic lesions. Many observers confirmed their observations, but, until this year all attempts to isolate the organism in pure culture, and to determine whether it fulfilled the requirements of Koch's postulates have been unsuccessful.

Schereschewsky[1] was the first to succeed in obtaining cultures of the spirochete. He placed fragments of syphilitic material in tubes of horse-serum solidified by prolonged heating at 60 C., and incubated at 37 under anaerobic conditions. But his success was infrequent, and contaminating organisms were numerous.

In 1910 Mühlens, using a modification of Schereschewsky's medium, obtained a pure culture, as also did Hoffmann in February of this year. The latter, however, did not succeed in producing syphilis in animals with artificially cultivated spirochetes until about a month ago, when he caused a syphilitic dermatitis in rabbits by infecting them with his cultures.

Meanwhile, Noguchi[2] has devised a method of isolating the *Spirochæta pallida* in pure culture and has established the identity of the organisms isolated as the true *Spirochæta pallida* by animal inoculations. Unlike previous investigators, he did not use syphilitic material obtained from man as a constituent of his medium, but employed the testicular tissue of rabbits which had been infected with human material. This method offers two main advantages—first, the ease with which large quantities of tissue containing numerous spirochetes may be obtained at any time; and second, the fact that the tissue is relatively free from contaminating bacteria, especially after passage through several rabbits.

The medium which Noguchi advocates is a "serum water" (sheep, horse or rabbit serum 1 part, distilled water 3 parts), to which a piece of sterile tissue is added; after sterilization this is covered with a thick layer of paraffin oil. The essentials for obtaining the first generation of the *Spirochæta pallida* are: (1) suitable fresh tissue in "serum water"; (2) a slightly alkaline reaction; (3) strictly anaerobic conditions; and (4) a temperature of 35 to 37 C.

Observing the enumerated conditions, Noguchi has grown six strains of the organism and succeeded in growing subcultures of one strain to the twenty-fifth generation. To obtain the spirochetes in pure culture he "grew them through a Berkefeld filter."

With two of the strains isolated he has succeeded in producing typical testicular lesions in rabbits; and Sowade[3] still later has reported positive results in five rabbits which developed constitutional syphilis. With the Blumenthal technic he obtained a positive reaction in several of the syphilitic animals, while the test was always negative in the controls.

Final proof is thus at hand that the *Spirochæta pallida* is the true causative agent of syphilis, and the near future may perhaps give us still better bed-side tests for diagnosis and a more rational specific therapy than we now have.

MAL DES AVIATEURS—AVIATOR'S DISEASE

Almost every occupation has its neurosis, and every new sport adds one to the long list. Thus we have become familiar with the "golfer's wrist," the "tennis elbow," and the "baseball arm" side by side with "writer's cramp." Trades have their dangers and develop new types of disease. The air induces pathologic as well as physiologic effects. Disturbances in physiologic balance experienced at altitudes were described by DaCosta under the name of *mal des montagnes* in the fifteenth century; and the dangers of changes in atmospheric pressure were made memorable by the eventful and fatal balloon ascension of Tissandier and his comrades from Paris in 1875.

The latest accession to the galaxy of maladies is the *mal des aviateurs.* With aviation meets as a daily occurrence, with transcontinental flight now an accomplished feat, and the aeroplane in actual operation as an "engine of war," it is not surprising that the medical aspects of this new vocation should invite the attention of the scientist. Professors Cruchet and Moulinier[1] of Bordeaux, have recorded the observations which they made at one of the large French meets. They point out that an aeroplane flight calls for a continuous effort, both physical and intellectual, under conditions to which the human organism is not primarily adjusted. An ascent to an altitude of nine thousand feet is accomplished in thirty to forty minutes and succeeded by a return to earth within five to seven minutes. To these speedy ascents and almost dazzling descents, forming the peculiar mechanical features of certain types of flight, are added the rapid changes in barometric pressure, the attendant modifications in the composition of the atmosphere, and the sudden alterations in temperature (from 68 F. on the ground to 42 F. at nine thousand feet)—a combination of factors including those to which all workers at high altitudes may be exposed.

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[1] Schereschewsky, J.: Deutsch. med. Wchnschr., 1909, xxxv, 835.

[2] Noguchi, H.: Jour. Exper. Med., 1911, xiv, 99.

[3] Sowade, H.: Deutsch. med. Wchnschr., 1911, xxxvii, 1934.

The data collected are, as yet, too scanty to permit of any elaborate discussion. Certain symptoms are of particular interest. During the ascents, shortness of breath may be experienced at relatively low altitudes, accompanied by some acceleration of the pulse. The attendant malaise is not characterized, as a rule, by the intense nausea noticed in mountain climbing; there may be a mild buzzing in the ears, but vertigo has not been reported. Frontal headaches are liable to arise at the altitude of about 4,500 feet. The sensation of cold becomes intense and the desire to urinate is acute. Irregularities in the voluntary muscular movements or reflex activities are also reported—perhaps the expression of the combined effects of cold, accelerated heartbeat, nervous tension, fatigue and other factors.

Descent is usually too rapid to allow an accurate analysis of the sequence of physiologic events. On landing there is an intense sensation of warmth over the surface of the body; the face is flushed; the eyes "sting." Headache is accompanied by an almost invincible desire to sleep. Increased blood-pressure is quite characteristic on landing from high flights, while severe tachycardia may attend fatiguing exhibitions.

As in the case of mountain-climbing, the altitude at which different individuals are attacked with malaise varies widely. Cruchet and Moulinier point out the vasomotor disturbances, hypertension, headache and drowsiness, especially after landing, as characteristics of the *mal des aviateurs*. They add that probably the extreme rapidity with which the aviator travels through a changing atmospheric environment contributes distress and even danger to variations in atmospheric pressure which divers, for example, would regard as relatively slight. Some of the symptoms noted in caisson workers find a counterpart in those reported by aviators.

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[1] Cruchet and Moulinier: Le mal des aviateurs, Jour. de physiol. et pathol. gén., 1911, xiii, 387.

THE FACTORS CONCERNED IN MILK SECRETION

The apparently inexplicable variations in functional activity on the part of the mammary glands are among the perplexing problems which beset the physician and physiologist alike. The period is not remote when it was customary to charge the nervous system with every regulatory office of this type. Since Goltz and his pupils demonstrated that normal pregnancy and lactation are still possible after exclusion of the spinal nervous mechanism, and since the possibility of transplanting the mammary glands without complete interruption of their secretory function has been asserted, the dominance of the nervous system in the phenomena of lactation has begun to be questioned.[1]

What sort of stimulus awakens the mammary gland to activity, if the integrity of the nervous system is not a necessary condition? One naturally thinks of those chemical excitants which, under the designation "hormones," are now called on to explain various secretory functions. Secretin, formed in the duodenal mucosa, is carried by the circulation to the pancreas and liver, and occasions an outpouring of the secretions of these glandular organs; or, again, the secretory activities of the kidney can be incited by material derived from the posterior or infundibular portion of the pituitary body. These are typical illustrations of the stimulation of glandular tissues by humoral paths. In searching for hormones which might be the cause of the growth of the mammary gland substance during pregnancy, Miss Lane-Claypon and Professor Starling[2] tested the effect of extracts of placenta, uterus and fetus on virgin animals, with positive results in the case of the rabbit-fetus injections. From their observations it would seem as if the developing fetus gives rise to some chemical substance which enters the maternal circulation and stimulates the dormant mammary glands. In the experiments of Biedl and Königstein[3] also, fetal extracts appeared to start the growth of the glands; but milk was not produced. It is not unlikely that the two phenomena, viz., growth of the mammary tissue and incitement of secretion, are more or less independent reactions with individual causes.

The search for a true galactagogue has received an impetus through further investigations showing that secretion of milk can be initiated independent of pregnancy. In the case of the Blazek sisters—twins living in parabiotic union—milk formed in the breasts of both individuals during the pregnancy of one of them. It must be assumed that the effective hormone was transmitted through humoral channels from the gravid to the non-pregnant sister.[4] The credit of the discovery of hormones which *influence milk secretion* belongs to the American investigators Drs. Isaac Ott and J. C. Scott.[5] In a study of the influence of extracts of various glands containing so-called internal secretions they found that a substance separated from the posterior part of the hypophysis *rapidly and greatly increased* the secretion of milk in goats. Corpus luteum, pineal body and thymus also increased the quantity of milk, although the infundibular product was the most powerful galactagogue. The ovary without the corpus luteum had no effect.

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[1] Basch: Die Innervation der Milchdrüse, Jahrb. f. Kinderh., 1906, lxiv, 795.

[2] Lane-Claypon and Starling: Proc. Roy. Soc. London, Sec. B., 1906, lxxvii, 505.

[3] Biedl and Königstein: Untersuchungen über d. Brustdrüsenhormon der Gravidität, Ztschr. f. exper. Pathol., 1910, viii, 358.

[4] Basch: Ueber exper. Milchauslösung und Verhalten der Milchabsonderung bei den zusammengewachsenen Schwestern Blazek, Deutsch. med Wchnschr., 1910, xxxvi, 981.

The galactagogue action of pituitary substance and extracts of corpus luteum has been confirmed by Schäfer and Mackenzie.[6] According to these Edinburgh investigators it is not even necessary to employ a lactating animal to demonstrate the galactagogue effects. In one instance they observed a free flow of (serous) fluid from the incised mamma of a virgin cat after injections of pituitary substance. Extracts of involuting uterine mucous membrane, and of mammary gland itself are markedly galactagogue. Drugs, such as pilocarpin, physostigmin and nicotin, which might have been expected to produce some effect on milk secretion, in view of their well-known effects on other glands, exerted no perceptible influence.

Aside from its interest in explanation of the impulse to milk production, this pioneer work is full of suggestive possibilities for the future. The commercial dairyman and the scientific therapeutist alike will watch the further progress of these researches with marked interest.

SO-CALLED BRILL'S DISEASE: AN ACUTE INFECTIOUS DISEASE OF UNKNOWN ORIGIN

In April, 1910, Brill described[7] what he termed "an acute infectious disease of unknown origin," the essential features of which are as follows: A rather sudden onset, accompanied by a chill, or a chilly sensation, followed by body pains, prostration, apathy and severe headache. There is fever which reaches a maximum on the third day, after which it usually maintains a fairly constant level around 103 to 104 F. On the fifth or sixth day, an eruption appears, which Brill considers characteristic, even pathognomonic, of the disease. The lesions are numerous, and consist of discrete maculopapules, 1 to 4 mm. in diameter; the eruption is erythematous in character, and petechiæ are not infrequently present. The distribution may be universal though the lesions are most commonly present on the trunk. The eruption does not appear in crops, but reaches its full efflorescence within twenty-four hours; it remains until defervescence, with which it rapidly disappears.

The disease has a duration of twelve to fourteen days, at the end of which time the fever usually falls by crisis, the headache and apathy rapidly disappear, and a rapid convalescence begins.

According to Brill, the disease, in spite of its many points of similarity to typhoid fever, is not a form of infection with the *Bacillus typhosus* or with any other of the so-called "dysentery group" of organisms. The nature of the rash, the defervescence by crisis, the absence of abdominal complications, the negative blood-cultures and agglutination tests, serve as aids in differential diagnosis.

The resemblance to typhus fever is more striking, and Brill regards the syndrome he describes as a mild abortive type of that disease. But though the skin manifestations in the two conditions are similar, and though there is a critical defervescence in both, there are many points of dissimilarity. Thus, in the syndrome described by Brill, there are no marked nervous symptoms and no history of contagion; there is a mortality of less than 1 per cent., and autumnal prevalence. Further, inoculation experiments, made with the blood and tissues of patients ill with this "infectious disease," have failed to produce the disease, whereas similar experiments in typhus fever, made by Nicolle and by Ricketts, have been successful. In spite of the fact that this experimental evidence seems to negative the identity of the two diseases, Brill believes[8] the syndrome described by him to be the result of infection with an attenuated modification of the virus of typhus fever.

The same opinion is held by Friedman,[9] who describes numerous cases of mild abortive typhus fever which he observed in Russia. These cases, like those described by Brill, had a mild course, were unattended by nervous symptoms, terminated in recovery, and, when occurring under hygienic conditions, were only slightly contagious.

THE CONSERVATION OF THE SOLAR ENERGY IN OUR FOOD-SUPPLY

It is only recently that we have heard warnings of the danger of an inadequate food-supply, but the problem seems to be a serious one and its solution may become more and more insistent. With the strenuous efforts made to conserve human life and with the rapid increase in population and the utilization of all available food sources, the question, according to H. P. Armsby,[10] resolves itself into the problem of the fixation of as much of the solar radiation as possible in the form of crops and also the utilization of the energy which the latter contain with the maximum of efficiency. But a small part of the solar energy stored up in the farmers' crops is directly available for man's use. Rejecting the straw and the bran, only about 30 per cent. of the energy stored in an acre of wheat is directly available for human nutrition, and much the same thing is true of other food crops. Our enormous supply of food-products has hitherto enabled us to disregard this fact and even to export much of our products or to make use of them in the production of meat. But Armsby believes that we are rapidly approaching the economic limit of production of meat from edible grains. Of solar energy stored up in a bushel of corn, only 3 per cent. is recovered in the edible portion of the steer to which it is fed, while in pork this percentage rises to scarcely more than 16, and in milk to 18. Of the solar energy stored in an acre of grain crops, therefore, only an insignificant fraction is recoverable in meat produced from animals fed on the grain. "In other words," says Armsby, "the stockman who feeds his animals on grain is expending energy available for human use as fuel for his animal machines for the sake of recovering a small fraction of it in higher-priced and more palatable products, a process which can hardly fail to remind one of the reputed origin of roast pig."

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[5] Ott and Scott: The Action of Infundibulin on the Mammary Secretion; the Galactagogue Action of the Thymus and Corpus Luteum, Proc. Soc. Exper. Biol. and Med., 1910, viii, 48.

[6] Schäfer and Mackenzie: The Action of Animal Extracts on Milk Secretion, Proc. Roy. Soc. London, Sec. B., 1911, lxxxiv, 16.

[7] Brill, N. E.: Am. Jour. Med. Sc., 1910, cxxxix, 484; abstr. in The Journal A. M. A., April 30, 1910, p. 1477.

[8] Brill: Pathological and Experimental Data Derived from a Further Study of an Acute Infectious Disease of Unknown Etiology, Am. Jour. Med. Sc., 1911, cxlii, 196; abstr. in The Journal A. M. A., Aug. 19, 1911, p. 681.

[9] Friedman, G. A.: Arch. Int. Med., October, 1911, iii, 427.

[10] Armsby, H. P.: Pop. Sci. Month., November, 1911, p. 496.

In the past, speaking broadly, meat production has consisted to a large extent in the exploitation of our food resources, but in the near future we shall have to reverse this attitude and study the conservation of the food-supply. "Not much longer can we continue to take the children's bread and cast it to the brutes." All the edible products which the farmers' acres can yield will be needed for human consumption and the problem will be to render available for human use those products, inedible by man until transmuted into meat, in which so large a share of solar energy is stored. Meat and other animal products will be produced, not as luxuries for the tables of the rich, which they seem to be becoming now, but as a means of conserving energy for human use. The stock-feeding of the future will be a highly artificial process dealing with food-stuffs unfamiliar at present and seeking to utilize to the utmost the energy of every available by-product.

Looking far ahead at the needs of the future in this respect, already experts in agriculture and in animal industries have been studying scientifically the most economical production of meat, and Armsby describes some experiments conducted in the Institute of Animal Nutrition in the Pennsylvania State College which seek in a way similar to the studies of Atwater and Chittenden on human beings to determine the chemical elements and energy of income and outgo per day in food animals. In these studies the respiration apparatus and the calorimeter have been made use of. The questions which the experimenters have endeavored to determine have been how the different feeding stuffs compare with each other as to their content of energy and the proportion available for the animal; the relative efficiency of different types of animals as converters of waste energy into human food; and how the various conditions under which the animals are kept affect their efficiency in this respect. Correct answers to these questions will afford a scientific basis for a rational system of conserving to the utmost the energy which the farmers have been taught by the soil expert, the chemist and the other scientists to accumulate in crops. The question of conservation of the food-supply is one of the most fundamentally important, at least equaling that of the conservative measures looking toward the preservation of mines, forests, water-supplies, etc.

Current Comment

THE PROFITS OF VACCINATION

According to a recent dispatch from Washington, members of state militias can be vaccinated against typhoid at a cost of 12½ cents per man. If the present claims regarding this method are correct, inoculation means immunity from typhoid, hence the more inoculations, the less typhoid. This being the case, if every person in the United States were inoculated, typhoid fever would disappear. The charge is often made by those who oppose sanitary measures, that physicians advocate vaccination on account of the "graft" there is in it. Let us suppose that typhoid vaccination should become universal, that every person in the United States were vaccinated, and that as a result typhoid fever disappeared. How would physicians gain? Let us see. In 1908 there were in the registration area 11,375 deaths from typhoid, or 25.3 per hundred thousand. Assuming that this ratio holds for the entire country, among the 91,109,447 inhabitants of the states, there would be about 23,050 deaths from typhoid. The mortality rate of typhoid varies from 12 to 20 per cent. One death out of every ten cases would be a conservative estimate. This would mean that there are about 230,000 cases of typhoid each year. If the average cost per case for medical services were $50, the total yearly income to the medical profession from typhoid fever would be $11,500,000, or $88.46 per year, for each of the 130,000 physicians in the United States. Now if each man, woman and child were inoculated against typhoid, and if such inoculation were repeated every ten years, and if typhoid disappeared, each physician would lose $88 per year, and the profession as a whole would be out $11,500,000 per year, or $115,000,000 in ten years. But—and here comes the "graft"—physicians would be paid for vaccinating the people! How much? If vaccination for typhoid became as common as vaccination for small-pox, and if physicians did as many free vaccinations as are now being done by school inspectors, health officers and others, they could not receive, on an average, more than 10 cents an individual for vaccination. Even if every man, woman and child were vaccinated, the income to physicians, from vaccinating 91,109,447 people every ten years would only be $9,110,944, or $911,094 each year. This would be an average of $7 per year for each physician. But he *would lose $88.46*, his present average income from typhoid, so that his net loss through the introduction of vaccination would be $81.46 per year, or $814 in ten

Tuberculosis in Boston.—The chairman of the trustees of Boston Consumptives' Hospital reports that during the last year 1,573 patients were received at the Day Camp; 10,090 were examined in the out-patient department and 40,000 home visits were made by the doctors and nurses connected with the institution. During the last five years the number of beds available for advanced cases of tuberculosis in Boston, has been increased 366 per cent. At the hospitals in Mattepan 1,124 bed patients have already been treated.

MICHIGAN

Addition to Sanatorium.—Through the efforts of Mrs. John T. Brodhead, Detroit, an addition to the Detroit Tuberculosis Sanatorium has been provided, which contains five rooms with all necessary conveniences for advanced cases of tuberculosis. Plans are said to be under way for another addition to the institution.

New Officers for Society.—At the annual meeting of the Michigan Society for the Prevention and Relief of Tuberculosis, held in Ann Arbor last week, the following officers were elected: president, Dr. Collins H. Johnston, Grand Rapids; vice-presidents, Drs. Guy L. Kiefer, Detroit, and Robert B. Harkness, Houghton; secretary, Miss Carol Walton, Ann Arbor; treasurer, Dr. Henry J. Hartz, Detroit, and directors, Mrs. Caroline Bartlett Crane, Kalamazoo, Dr. Ralph C. Apted, Grand Rapids, Mrs. B. C. Whitney, Detroit, Dr. Victor C. Vaughan, Ann Arbor, Dr. Russell L. Dixon, Grand Rapids, Mrs. Elnore Chamberlain, Hartford, and Mrs. Huntley Russell, Grand Rapids.

NEW YORK

Personal.—Dr. Willis W. Waite, city bacteriologist of Syracuse, has resigned to accept the directorship of Dr. Hugh W. Crouse's clinical laboratory, El Paso, Tex.——Dr. and Mrs. Charles Barber Willis, Huntington, celebrated the fiftieth anniversary of their marriage, October 31.

District Society Meetings.—At the fifth annual meeting of the Seventh District Branch of the Medical Society of the State of New York, held in Rochester, October 19, Corning was named as the next place of meeting. Dr. Herbert B. Smith, Corning, was elected president; Dr. Willard D. Becker, Rochester, vice-president, and Dr. John F. Myers, Sodus, and Dr. Homer J. Knickerbocker, Geneva, were reelected secretary and treasurer, respectively.——The Medical Association of Central New York held its annual meeting in Rochester, October 19, electing Dr. William D. Johnson, Batavia, president; Dr. Louis F. O'Neill, Auburn, vice-president, and reelecting Dr. John J. Buettner, Syracuse, secretary, and Dr. Charles O. Boswell, Rochester, treasurer.

State Sanitary Officers' Meeting.—The New York State Sanitary Officers' Association, made up of the 1,400 health officers of the state, held its third annual meeting in New York City, October 24, 100 members being present. The following officers were elected: president, Dr. Frank Overton, Patchogue; vice-presidents, Drs. Louis M. Brown, Purdy's Station; Louis B. Couch, Nyack, and Orlando J. Hallenback, Canandaigua; secretary, Dr. Montgomery E. Leary, Rochester, and treasurer, Dr. William Stanton, Webster. The association decided to undertake the revision of the sanitary laws of the state with the cooperation of the State Department of Health, and a legislative committee consisting of the president and secretary and five members is to be appointed to take up this task. The sanitary codes of various states will have to be studied and the best points in each adopted, so that the new sanitary code may be as nearly ideal as possible.

New York City

Personal.—Dr. Peter Hughes, surgeon and chief of St. Catherine's Hospital, Brooklyn, was operated on November 1, in New York City, for the removal of a stone from the kidney, and is reported to be progressing favorably toward recovery.——Dr. Simon Flexner of the Rockefeller Institute for research, has been appointed by the Emperor of Germany an honorary member of the Royal Institute for Experimental Therapeutics, Frankfort-on-the-Main.

Montefiore Home.—The directors of this institution held their twenty-seventh annual meeting, November 4, when it was announced that the new buildings of the home, which have cost about $1,500,000, will be completed in about eighteen months. There will be accommodations for 480 patients. During the past year the New York home and the country sanatorium together have cared for 1,109 patients. Mr. and Mrs. Mortimer L. Schiff have given $25,000 toward the building fund, and George Sidenburg has given $25,000 for an operating room.

Harvey Lecture.—The fifth lecture of the seventh course of Harvey Society Lectures will be given at the New York Academy of Medicine, November 25, at 8:30. Prof. W. T. Sedgwick, of the Massachusetts Institute of Technology, will speak on "Illuminating Gas and the Public Health."

Health Department Takes over Milk Station.—The commissioner of health announces that on November 1, the department of health resumed charge of twenty-two of the infants' milk stations formerly conducted by the New York Milk Committee in the Borough of Manhattan. The committee had publicly announced its intention of discontinuing these stations.

Health Department and the Strikers.—Dr. Lederle announces that the health department will not interfere with the strike among the garbage collectors and street cleaners at present. Should the strike be protracted, however, the health department has the power to let contracts for the removal of garbage. Dr. Lederle is of the opinion that no particular danger can result from the garbage piling up for three or four days so long as the weather remains cool.

NORTH DAKOTA

Personal.—Dr. Ulrich F. Bush, Fargo, has returned from Europe.——Dr. Gustave F. Ruediger, Grand Forks, has been reappointed city milk inspector.

Fire in Hospital.—A fire in the Jamestown City Hospital, October 28, necessitated the removal of all patients from the institution. This was accomplished without serious injury to the patients, and a temporary hospital has been established in the neighboring residences.

Sanatorium Contract Let.—At a recent meeting of the board of trustees of the North Dakota Tuberculosis Sanatorium, Dunseith, the contract for the administration building was let for about $20,000. The foundation of the building will be laid this fall and the building will be completed in the early spring. The institution will accommodate forty patients.

OHIO

Medical College Custodian Dies.—Richard Pugh, aged 83, for nearly fifty-five years custodian of the Starling Medical College, Columbus, and well known to many generations of students, died at his home, October 19.

Meeting of Women Physicians.—At a meeting of the Columbus Women's Medical Club, held November 10, Dr. Jane G. Roney Husted was elected president; Dr. Harriet B. Clark, vice-president, and Dr. Alice M. Johnston, secretary-treasurer.

State Hospital Physicians Meet.—At the semi-annual meeting of the Association of Assistant Physicians of the Ohio State Hospitals, held at the Athens State Hospital, October 4 and 5, Dr. Clyde C. Kirk, Toledo, was elected president; Dr. G. G. Edwards, Gallipolis, vice-president; Dr. Mary K. Isham, Columbus, secretary, and Dr. August C. L. Werner, Dayton, treasurer. The next meeting will be held at the Columbus State Hospital.

PENNSYLVANIA

Milk Laboratory Moves.—The milk laboratory conducted by the milk committee of the Wyoming Valley Society for the Prevention and Treatment of Tuberculosis has been moved to the State Dispensary Building, 184 South Washington Street, Wilkes-Barre, where nurses will be on duty every morning from 9 to 10, to consult with and advise mothers.

Open-Air Pavilion Dedicated.—A children's pavilion and open-air school at the Jewish Consumptive Sanitarium at Eaglesville, was dedicated November 5. After addresses had been made by the chairman and others, the keys of the various rooms and compartments were auctioned off and $3,400 was netted. The sum of $425 was realized by the sale of chairs.

For Sewage Disposal.—The borough council of Norristown has appropriated $500 for the use of the borough engineer to obtain expert advice and to view sewage disposal plants in Ohio, in order to establish a sewage disposal plant at Norristown. It is reported that the one at Philadelphia is an experiment, the one at Reading unsatisfactory, and that the one erected at the State Hospital for the Insane at Norristown is a public nuisance.

Personal.—Dr. John C. Hutton, Harrisburg, is convalescent after a cerebral hemorrhage.——At a meeting of the directors of the Homestead Hospital, November 3, Dr. John Ballagi was elected a director, vice Dr. William A. Jones, resigned, and Dr. Charles A. Shirey, Manor, was elected resident physician.——Dr. Boyd W. Schaffner, Elwood City, has been appointed local surgeon for the Pittsburg, Lake Erie, Baltimore and Ohio Railroad, vice Dr. William A. Shannon, resigned.

Tri-County Medical Society.—The Goodno Medical Society, composed of physicians of Dauphin, Lancaster and York counties, met in Lancaster, October 12. Dr. George W. Brose, York, was elected president; Dr. Roscoe L. Perkins, Harrisburg, vice-president, and Dr. Brantley F. Parker, York, secretary-treasurer.

Philadelphia

Statue Presented.—A life-sized marble statue of Æsculapius, a replica of the one in the Vatican at Rome, was presented to the College of Physicians by Dr. Richard H. Harte, and accepted on behalf of the college, by Dr. S. Weir Mitchell, at the November meeting of the college.

Hospital Buys Lot.—The German Hospital of the city of Philadelphia has purchased a lot at the northeast corner of Corinthian Avenue and Cambridge Street for $4,000. The hospital recently built a nurses' home at the southeast corner of Corinthian Avenue and Cambridge Street.

Memorial Funds.—Reports from the committee in charge of the memorial to the late Dr. De Forest Willard announce that the fund at present amounts to $2,000. A similar committee in charge of the memorials to the late Dr. James Baynes Walker announces that the fund for that memorial has reached $1,000.

City Hygiene Laboratory to be Moved.—Because of the smallness of the quarters in the City Hall, Dr. Joseph S. Neff, director of Public Health and Charities, plans to have the laboratory of hygiene, part of the bureau of health, removed to the Philadelphia General Hospital, and has asked councils to appropriate money to build a new laboratory there.

University of Pennsylvania Alumni Hold Family Party.—The Philadelphia Alumni Society of the Medical Department of the University of Pennsylvania has issued invitations to a family party to be held at the Bourse, November 18. A reception is to be held in honor of the newly elected professors in the medical department, Drs. Gwilym G. Davis, John B. Deaver, M. Howard Fussell, Milton B. Hartzell, Edward Martin, A. M. Pearce, A. H. Richards, Alfred Stengel and Alonzo E. Taylor. The dean, Dr. Allen J. Smith, will tell of the present requirements for admission; Dr. Barton C. Hirst will report on the requirements for admission in the various medical schools and what the state board demands of schools whose graduates desire licenses to practice; Dr. Alfred Stengel will outline the course of medical instruction; Dr. Edward Martin will tell of the teaching of surgery and allied branches; Dr. Alonzo E. Taylor will give an account of how physiologic chemistry is taught, and A. H. Richards will detail the methods followed in teaching pharmacology.

VIRGINIA

Norfolk County Physicians Meet.—At the annual meeting of the Norfolk County Medical Society, held October 7, Dr. Philip St. L. Moncure was elected president; Dr. Edward T. Hargrave, vice-president, and Dr. Charles L. Harrell, secretary-treasurer.

New Rule Gives More Room.—The health commissioner, Ennion G. Williams of Richmond, announces that under the provisions of the rule limiting the stay of patients at the Catawba Sanatorium to six months, removals and changes have become so frequent that suitable patients can now be admitted without long delays.

Personal.—Dr. Junius F. Lynch, Norfolk, was operated on for appendicitis at St. Luke's Hospital, Richmond, October 28, and is reported to be doing well.——Dr. Randolph A. Watts, intern at the Richmond City Hospital, was operated on for appendicitis in that institution, October 31.——Dr. William C. Day, Danville, was thrown from his horse, October 31, fracturing his leg.——Dr. William T. Oppenheimer, Richmond, has been selected by the board of directors of the state penitentiary as surgeon of that institution to fill the unexpired term, which extends to December 31, vice Dr. Charles V. Carrington, removed. Jan. 1, 1912, Dr. Herbert Mann will take charge of the work.

WASHINGTON

Industrial Insurance Examiners.—The following physicians have been appointed to make examinations for the state industrial insurance commission: Drs. I. Royal Watkins, Aberdeen; Winston Appleby, Anacortes; W. W. Ballaine, Bellingham; David Livingstone, Centralia; Edward W. Stimpson, Roslyn; Delbert O. Kearby, Cle Elum; Hannibal Blair, Elma; Adelbert J. McIntyre, Hoquim; Guy E. Marcy, Montesano; James F. Scott, North Yakima; Henry B. O'Brien, Tacoma; Harrison A. Wright and Curtis H. Thomson, Seattle; James F. Mills, Sedro Woolley; Drs. Barnhart & Newell, Spokane; A. L. Mathieu, South Bend; Leon L. Love and Joseph F. Griggs, Tacoma; Floyd A. Bird, Kelso, and Howard R. Keylor, Walla Walla.

Opposes Contract Work.—The Pierce County Medical Society at its meeting in Tacoma, October 17, adopted resolutions against contract practice for lodges. The by-laws of the society are to be changed so as to provide for the proper disciplining or punishment of members who violate this rule.

WEST VIRGINIA

Personal.—Dr. Edward Davis has been appointed medical inspector of the schools of Salem.——Dr. Charles A. Barlow, Benwood, has been reelected brigadier-general of the uniform rank of Knights of Pythias.——Dr. Martin V. Godbey, Charleston, has succeeded Dr. Otis L. Aultz as small-pox and infirmary physician of Kanawha County .

Sanatorium Opened.—The Sanatorium of the Antituberculosis Society of Ohio County, at Viewpoint, was opened without formalities last month. The formal opening of the institution will be delayed until spring. The first of the three buildings is already completed and in occupancy; the work on the other two buildings is proceeding rapidly.

WISCONSIN

Society Meeting.—The Trempealeau-Buffalo-Jackson County Medical Association held its annual meeting at Arcadia, recently. Dr. Edwin E. Moore, Merrilan, was elected president; Dr. Carroll L. Storey, Whitehall, vice-president; Dr. Henry A. Jegi, Galesville, secretary and treasurer, and Dr. Bertholet P. Rosenberry, Arcadia, delegate to the state association.

Personal.—Dr. C. J. Wallace, Superior, has been appointed surgeon for the new steel plant of the Minnesota Steel Company on the St. Louis River.——Drs. Victor F. Marshall and James V. Cavanan, Appleton, are among the organizers of the Oregon-Wisconsin Timber-Holding Company.——Dr. Guy C. Waufle, Janesville, who was operated on in Mercy Hospital in that city, November 2, is reported to be doing well.

Antituberculosis News.—At the annual meeting of the Wisconsin Antituberculosis Association, held in Milwaukee, October 13 and 14, the following officers were elected: president, Dr. Mazyck P. Ravenel, Madison; vice-president, Dr. Gustave Windesheim, Kenosha, and executive secretary, Dr. Hoyt E. Dearholt, Milwaukee.——The proposition of the Milwaukee County Board to lease and operate the Greenfield Sanatorium as a county institution has been approved by the health committee and accepted by the city council. This gives to Milwaukee the Greenfield Sanatorium for advanced cases and the Blue Mound Sanatorium for incipient cases of tuberculosis.——At a meeting held in the Appleton City Hall, October 7, organization of the Appleton Antituberculosis Association was effected. The association will be a local affiliated branch of the state association.——A special committee appointed at the last meeting of the Outagamie County Board has selected a site for the County Tuberculosis Sanatorium at Kaukauna.——The Green Bay Public Health Association was organized October 6. Dr. Austin O. Olmsted, Green Bay, was named as a member of the advisory board. The objects of the new organization are the study of the local public health to promote health conditions and cooperation with the state antituberculosis association in its work.——The Social Workers' Tuberculosis Sanatorium, Milwaukee, was formally opened October 8. Although the association is Jewish, the institution is non-sectarian. It has at present twelve patients.

GENERAL

Dental Corps for Organized Militia.—A ruling by Brigadier-General Evans, chief of the division of militia affairs, just issued, sanctions the attachment of a dental corps to militia organizations in the same proportion as exists in the regular establishment.

Veteran Declared Leper.—John R. Early, a veteran of the Spanish-American War, who, it was claimed, was suffering from leprosy, and whose case became celebrated by reason of the differing opinions of experts, has finally been declared to be a leper by the medical board of the pension bureau and has been placed on the total disability list of the bureau.

Æsculapian Society Meeting.—The sixty-fifth annual meeting of the Æsculapian Society of the Wabash Valley was held in Paris, Ill., October 26, and the following officers were elected: President, Dr. Cyrus E. Price, Robinson, Ill.; vice-president, Dr. J. W. Evinger, Paris, Ill.; and secretary and treasurer, Dr. Herbert N. Rafferty, Robinson, Ill. (reelected). The next meeting will be held in Terre Haute, Ind., in April, 1912.

Army Medical Corps Examinations.—Preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held Jan. 15, 1912. Full information can be procured on application to the "Surgeon-General, U. S. Army, Washington, D. C." Applicants must be citizens, between 22 and 30 years of age, and medical graduates, who have had at least one year's hospital training as an intern, after graduation.

Ohio Valley Physicians Elect.—The annual meeting of the Ohio Valley Medical Association was held in Evansville, Ind., November 8 and 9, and the following officers were elected: president, Dr. Louis D. Brose, Evansville, Ind.; vice-presidents, Drs. Daniel N. Eisendrath, Chicago; Dr. Henry R. Alburger, Indianapolis, and Angus D. Willmoth, Louisville, Ky., and secretary-treasurer, Dr. Benjamin L. W. Floyd, Evansville, Ind. (reelected).

Personal.—Surgeon Henry R. Carter, U. S. P. H. and M.-H. Service, in command of the U. S. Marine Hospital, Louisville, who has been ill with typhoid fever, has been taken to Johns Hopkins Hospital for treatment.——Major Clyde S. Ford, M. C., U. S. Army, Fort Harrison, was operated on for appendicitis, at Grant Hospital, Columbus, November 1, and is reported to be improving.——Dr. Roger G. Perkins, professor of hygiene in Western Reserve University, Cleveland, was appointed a member of the executive committee of the International Pure Water Association, and not Dr. Francis E. Fronczak, Buffalo, N. Y., as announced in The Journal of October 7.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the Alvarenga Prize for 1911 has been awarded to Dr. Francis D. Patterson, Philadelphia, for his essay on "The Parathyroid Glandules."——The next award of the prize, being the income for one year of the bequest of the late Senor Alvarenga and amounting to about $180, will be made, July 14, 1912, provided that an essay deemed worthy of the prize shall have been offered. Essays may be on any subject in medicine, but must not have been published; must be typewritten; if written in a language other than English, must be accompanied by an English translation, and must be received by the secretary of the college on or before May 1, 1912.

Clinical Congress.—The second annual meeting of the Clinical Congress of Surgeons of North America was held in Philadelphia, November 7-16. Up to November 11, more than 1,100 members had registered, including prominent men from all over the country. The work of the congress consisted of day and evening sessions; the day sessions were devoted entirely to clinical surgery, and clinics were conducted in all hospitals in the city from 9 in the morning until 5 in the afternoon. The evening literary sessions were conducted largely by men from out of the city, who presented papers on surgical subjects, many of the lectures being illustrated by stereopticon views. Both the literary and the clinical sessions were exceedingly interesting.

The first evening was devoted to surgical pathology of the stomach and duodenum, surgery of the liver and biliducts and surgery of the pancreas. The second evening was occupied with the president's address and addresses with lantern demonstrations, by Drs. Alexis Carrel, New York City, and William J. Mayo, Rochester, Minn., on subjects which have already been noticed in The Journal. On the evening of November 10, neurologic subjects were discussed, the chief papers being by Drs. Hugh T. Patrick, Chicago, on "The Technic and Results of Deep Injections of Alcohol for Tic Douloureux;" by Dr. Harvey Cushing, Baltimore, on "Clinical Types of Disordered Function of the Pituitary Body," and by Dr. Alfred Reginald Allen, Philadelphia, on "The Operative Treatment of Experimental Lesion of the Spinal Cord Equivalent to Crush Injury of Fracture Dislocation of the Spinal Column."

On the evening of the thirteenth, Dr. Charles H. Mayo, Rochester, Minn., presented a paper, with stereopticon demonstration, on the thyroid gland and its diseases; Dr. Joseph A. Blake, New York City, discussed the operative treatment of fractures, and Dr. John M. T. Finney, Baltimore, considered the significance of blood in the stools. The evening session of November 14 was devoted to pediatrics. Dr. Charles L. Scudder, Boston, read a paper, with lantern demonstration, on the surgical treatment of pyloric stenosis in infancy; Dr. Charles M. Dowd, New York City, discussed the differences between surgery of children and adults, with lantern demonstration, and Dr. R. Tunstall Taylor, Baltimore, gave a preliminary report on the experimental study of stereo-arthrolysis. Obstetrics was the object of discussion in the literary session of November 15. Dr. Edward Reynolds, Boston, spoke on the surgery of the tubes and ovaries; Dr. Edward B. Cragin, New York City, discussed the treatment of ectopic gestation and Dr. John A. Sampson, Albany, N. Y., gave an address, with lantern demonstration, on the circulation of fibroid tumors. On the same evening there was a combined meeting of the Sections of Otology, Laryngology and Ophthalmology, at which Dr. Joseph H. Bryan, Washington, D. C., read a paper on the surgery of sinuses and its relation to orbital complications; Dr. Gorham Bacon, New York City, discussed the relation between otitic and intracranial diseases, and Dr. John E. Weeks, New York City, described the newer operations for glaucoma. The clinical program included operations and demonstrations at practically all the hospitals in Philadelphia.

The local profession entertained lavishly. A general reception was given by the Philadelphia County Medical Society at Wanamaker's Tea Room, November 8; a reception to the president was given by local physicians at the Bellevue-Stratford, November 9, and on November 17, the Medical Club of Philadelphia gave a reception in honor of the president and president-elect at the Bellevue-Stratford. Drs. John B. Murphy, Abraham Jacobi, Albert J. Ochsner and Franklin H. Martin were the guests of honor at a dinner given by Dr. Edward E. Montgomery, at the University Club, November 9; Dr. John B. Deaver gave a dinner in honor of Dr. Maurice H. Richardson, Boston, at the Union League Club, November 8, and Dr. William J. Mayo, Rochester, Minn., was the guest of honor at a dinner given by Dr. Charles H. Frazier, November 9. The following officers were elected at the business session, November 13: president, Dr. D. Edward Martin, Philadelphia; vice-president, Dr. George E. Brewer, New York City; general secretary, Dr. Franklin H. Martin, Chicago (reelected), and general treasurer, Dr. Allen B. Kanavel, Chicago (reelected).

FOREIGN

Pan-American Sanitary Conference.—An important meeting of delegates from the various republics of North and South America opened at Santiago, Chile, November 1. It is the fifth international sanitary conference of American republics.

Death of Bernhard Fränkel.—The cable reports the death, at the age of 75, of Prof. Bernhard Fränkel, leader in the campaign against tuberculosis, founder in 1887 of the university policlinic for the nose and throat at Berlin, and editor of the *Archiv für Laryngologie* since 1894. His numerous works embrace all medical fields connected even remotely with laryngology, and he was prominent in the organization of the medical profession and served for twenty-five years as secretary of the Berlin medical society. In honor of his seventieth birthday, Nov. 17, 1906, a historical laryngologic exhibition was held at Berlin, and the fiftieth anniversary of his entering on his professional career was celebrated in 1909. To Fränkel more than to any one else, probably, is due the great development in Germany of the system of sanatorium treatment of tuberculosis among wage-earners.

The Nobel Prize in Chemistry for 1911.—The cable announces that the Nobel prize for chemistry has been awarded this year to Mme. Curie, who already has shared in one of the prizes, the prize for physics in 1903 having been divided between Becquerel, discoverer of the Becquerel rays, and Prof. and Mme. Curie, the discoverers of radium. In a recent announcement to the Paris Academy of Sciences Mme. Curie stated that in collaboration with Prof. de Bierne she had succeeded in producing pure radium by treating radium bromid by an electrolytic process and extracting the metallic radium by distillation. It is said to have the appearance of a white metal, it changes to black on exposure to the air, burns paper and oxidizes in water. It is most notable that anyone should win such fame in two branches of science as to be awarded an important prize in both. Two other women have received Nobel prizes: Selma Lagerlöf for her literary works, and Baroness von Suttner of Vienna for her efforts and novel in the interests of peace.

CANADA

Need of Institutes of Physiology.—Dr. N. H. Alcock, the newly-appointed professor of physiology in McGill University, emphasizes the pressing need of an institute for physiology in connection with the university. He claims that this would cost only $25,000, and would require not to exceed $4,000 for its annual maintenance.

Tuberculosis Hospital for Quebec.—The government of the Province of Quebec has granted an appropriation of $3,500 per annum for the maintenance of a tuberculosis hospital in the city of Quebec, with accommodation for fifty patients. The institution, which will cost $60,000, is to be placed under the medical control of Laval University, Quebec.

Transfers of Medical Officers.—Lieut.-Col. James Alexander Grant, administrative medical officer of Toronto, is to be transferred to Halifax; Lieutenant-Colonel Hero R. Duff, Kingston, to Toronto; Lieutenant-Colonel C. W. Belton, London, to Kingston; Major J. D. Brousseau, Quebec, to London, and Lieutenant-Colonel Gilbert L. Foster, Halifax, N. S., to Quebec.

Need for Isolation Hospital.—Pleading for a larger and better isolation hospital for Toronto, Alderman McCarthy stated at a recent meeting that more than one-half of the tuberculosis patients in that city are destitute, that there are from 600 to 700 school children at present suffering from tuberculosis, that 232 people died during 1911 from the disease, and that it has been necessary to add two extra nurses to the station of the health department for the care of tuberculosis cases.

Personal.—Dr. Charles Sheard has resigned as professor of preventive medicine in the University of Toronto.——Dr. James Alexander Hutchison, Montreal, has been appointed associate professor of surgery and of clinical surgery in the medical department of McGill University. Dr. John M. Elder has been advanced to a similar station.——Dr. Donald D. MacTaggart has been appointed professor of medical jurisprudence in the McGill University.——Dr. Charles O'Reilly, Toronto, has returned from abroad.

LONDON LETTER

(From Our Regular Correspondent)

London, Nov. 4, 1911.

Plague in England

In previous letters to The Journal the presence of plague in the county of Suffolk has been described from time to time. It is supposed to have been imported by rats in grain ships coming from the East. In December, 1906, and January, 1907, several cases of what was supposed to be pneumonia occurred in two adjoining cottages in the parish of Shotley. There were three cases in one house, two of which were fatal, and five cases in the other, of which four were fatal. It is believed now that all these were cases of pneumonic plague. In January, 1910, two persons died at Trimley, exactly opposite Shotley, on the other side of the river Orwell, from a disease now believed to have been plague. In September, 1910, four persons died in two adjoining cottages in the village of Freston, six miles from Shotley. A little girl in one of the cottages was the first to die, and she was followed by her mother, who had nursed her. The woman was nursed by her husband and by a woman who lived in the next cottage, and both these persons died. The peculiarly infectious character of the disease aroused suspicion, and by this time no doubt exists that all four died of pneumonic plague. It was found that for at least three years, and possibly longer, rats had been dying in large numbers in the neighborhood of the Orwell. One or two dead rats were found to be infected with plague, and the capture of a number of live rats near Ipswich resulted in the discovery that more than 5 per cent. of them were suffering from the disease. During the most virulent epidemics in Bombay, when rats were daily caught and examined in great numbers the average of infected rats was rarely found to exceed 6 per cent. Circumstantial evidence points to the banks of the river Orwell as probably being the original point of entry of the infection in Suffolk. Energetic measures were taken for rat destruction on a large scale and no further cases of plague in man occurred until October 10, this year, when a sailor was admitted to a hospital at Shotley with pneumonia. Examination of his sputum revealed plague bacilli. He was at once isolated and all precautions taken to prevent the spread of the disease. It is thought that he derived the disease from a rabbit caught in the district (these animals as well as rats had previously been found affected with plague). While preparing the rabbit for dinner he cut his finger. A notice has been posted up at the local naval barracks prohibiting anyone from taking in either hares or rabbits.

An Imperial Hospital

For some time it has been felt that more adequate facilities than those provided in private nursing homes are required for dealing with the large number of patients coming to London from the provinces and from oversea dominions for operations. The necessary capital, $90,000, has now been subscribed and a site secured for the erection of a building to accommodate a well-equipped institution which is to be open to the public at moderate charges, and will not be in any way of a charitable character. The promoters of the movement point out that under present conditions patients have no choice between a charity hospital or one of the hundreds of private nursing homes, which in many cases are run as speculations and are not subject to medical supervision, while the charges are often prohibitive to persons of moderate means, the fees ranging from $50 to $100 per week. Nursing homes are, almost without exception, merely converted dwelling-houses and therefore entirely unsuited to modern requirements of the sick. Often, too, they are inefficiently conducted. In the new hospital, which has the hearty support of a large number of London physicians, it is intended to give special consideration to patients from oversea dominions when they are accredited by the agents-general or other official representatives of their states. Provision is to be made in the first instance for forty beds, but the building will be so constructed that additional floors can be added at any time. The management of the hospital will be chiefly in the hands of the committee of physicians elected by the board of directors and a staff of qualified nurses will be employed. Patients will be permitted to have their private doctors. Charges will range from $15.50 upward per week. After payment of a moderate dividend on the preference and ordinary shares a substantial sum of any balance of profit will be set aside each year to form a fund to assist necessitous patients in paying their fees.

The Health of the Navy

The report on the health of the navy during 1910 has just been issued and shows steady improvement. The total force was 113,530 and the total number of cases of disease and injury, 74,233, which gives a ratio of 653 per thousand, a decrease of 42 compared with the average ratio of the preceding five years. The total number of days' sickness was 1,140,568, representing an average loss to the service of 10.04 days for each man, a decrease of 0.4 as compared with the average of the preceding five years. Tuberculosis shows a steady decline; the number of cases during the year was 261, which is below the average. This is attributed to improvement in the general environment and prompt removal of sources of infection. With regard to venereal diseases there is some improvement in the returns for primary syphilis, but little change in other respects. The highest rate for venereal diseases is in the China station, where it amounts to 154 per thousand.

Death From a Wasp-Sting and Workman's Compensation

In the Court of Appeal a curious case was heard, in which the widow of a man who was stung by a wasp and died from septicemia as a consequence claimed under the Workmen's Compensation Act. In the lower court the judge found for her. The appeal was made on the grounds that there was no evidence that the man was stung during his employment or that the accident had arisen out of his employment, as was required by the act. The man was engaged in threshing wheat on a farm and the conclusion was arrived at that wasps which were hibernating in the stack were disturbed by the engine and came out and stung the man. The Master of the Rolls (the presiding judge) gave judgment reversing the decision of the lower court, on the ground that there was no evidence that the wasps were disturbed by the machine and, therefore, it had not been proved that the accident arose out of the man's employment.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Oct. 27, 1911.

Personal

M. Ranvier, professor of general anatomy at the Collège de France, has, at his own request, been allowed to retire. According to rumor the professorship will be discontinued.

Honors to Prof. R. Lépine

October 22, the pupils and friends of Prof. R. Lépine of Lyons, who has just retired, met in the amphitheater where he had taught so long to present him with a jubilee book prepared in his honor. Speeches were made by his successor in the chair of clinical medicine, Professor Roque, and by Professors Collet and Cazeneuve of Lyons, Landouzy of Paris and Henrijean of Liége. The last-named, speaking in the name of foreign scientists, explained how much of Professor Lépine's instruction crossed the frontiers of France and how well his name was known in Belgium and even in Germany. M. Joubin, the rector who presided over the ceremony, thanked Professor Lépine for the renown which he had brought to the Lyonnese University and read letters from the director of superior instruction and the minister of public instruction expressing their esteem and admiration for the learned clinician.

Plan for the Creation of a Superior Council of Medical Studies

The Association des membres du corps enseignant des Facultés de médecine, founded two years and a half ago (The Journal, April 10, 1909, p. 1192), demands the creation of a Conseil supérieur des études médicales. There is at present a Conseil supérieur de l'Université, which has jurisdiction over all national instruction. But this assembly has not the right of initiative and is powerless to obtain reforms in medical instruction. The proposed assembly, composed solely of physicians, most of whom would be named by their colleagues and not by the minister of public instruction, would exist for the purpose of advising and assisting the government on all matters pertaining to medical instruction. It would have the right of initiative. The provinces would have the suitable representation which they have hitherto lacked. Besides the minister of public instruction, the vice-rector of the University of Paris and the director of superior instruction, who would belong to it ex officio, there would be twenty-nine medical members of the superior council of medical studies, two senators, two deputies, four ordinary practitioners, one representative of the preparatory schools of medicine, one of the military schools, fourteen representatives of the Facultés, chosen by their members, and five physicians of the hospitals. The latter, although they have instructed successive generations of students, have up to the present had no representation on the higher councils of instruction and the oversight appears altogether unjust.

Measures Against Frauds in Foodstuffs

The municipal laboratory of Paris has just created a service of rapid analyses of foodstuffs which will permit merchants to test their wares before offering them to their customers and consumers to test the quality of the products sold to them. The results of the analysis will be communicated to the inquirer two hours after the sample is delivered.

Tetanus an Occupational Disease

A workman died of tetanus. His widow testified that he had received a slight prick in his right foot ten days before his death and sought compensation on the ground that he was the victim of an industrial accident. The courts have decided in her favor.

Dangerous Altitudes for Aviation

In view of the records of the height to which ascensions have been made lately, and in view of the fact that certain aviators are ambitious to surpass the altitude of 5,000 meters, the Aero-Club of France, on the advice of its commission on physiologic ascensions, has thought it wise to make known the dangers to which aeronauts are exposed in high altitudes and the precautions that they ought to take. From the physiologic ascensions which have been organized for about ten years by the Aero-Club, it seems that above 4,500 meters one is in the dangerous zone. At the altitude of 5,500 meters a given volume of air weighs half as much as at the level of the ground. The oxygen being rarified, the only means of providing against possible accidents is to carry a provision of oxygen. The most practical and efficient means of making use of it is to have a tube of compressed oxygen with an inhalation mask which may be applied to the aviator's face.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Oct. 27, 1911.

Personal

Professor Lesser, director of the clinic for skin and venereal diseases, has been made regular professor; heretofore he was only an honorary professor and hence not a member of the faculty. His present promotion has only a personal character, affecting him alone, and the department of education retains the power not to grant the same title to his successor. Professor Neisser of Breslau and Professor Killian, who was recently appointed professor of laryngology at our university, and certain other specialists have a similar position.

Professor Caspary of Königsberg died October 19 at the age of 74. Until 1905 he held the chair of dermatology at that university.——Professor Jaffé of Königsberg, died October 26.——Privy Councilor Aschenborn died October 20, at the age of 60, in Berlin. He was a very able practitioner and a member of the state medical department (*Medizinalabteilung des Ministeriums*).

The Göttingen ophthalmologist, Professor v. Hippel, celebrated his seventieth birthday, October 24.

Honors for Professor Waldeyer

As an honor in celebration of Waldeyer's seventy-fift birthday, the city of Göttingen has decided to place a memoria tablet on the house in which he lived during his student days November 3 the Berlin student body on the occasion of th golden jubilee of his doctorate held a Waldeyer *Kommers.*

A Tax on Bachelors

In the principality of Reuss each person of a certain age who has no relatives whom it is his duty to support, mus pay a special tax. Whether this draconic regulation is likely to increase the tendency to marry, is doubtful. The tax wil always be smaller than the increasing expense of housekeeping for a married couple.

Museum of Hygiene in Dresden

Some important departments of the international hygienic exposition in Dresden, which will be closed in a few days, wil remain, particularly the popular "Hall of Mankind" and the historical and ethnological department, which will be transformed into a permanent museum of hygiene for the city of Dresden. This is on condition that the city of Dresden erects a special building therefor and appropriates means of maintenance for the museum. These departments are the private property of the originator and manager of the exposition, Mr. Lingner, who has lately been appointed privy councilor, with the title of "excellency." He will present these departments to the city in spite of the fact that offers to buy them have reached him from other countries. It is said that he has been offered from America the sum of $1,000,000 (4,000,000 marks) for the collections.

The exposition has been extraordinarily successful; it was visited by more than 5,000,000 people and made considerable profits, estimated by some at $250,000 (1,000,000 marks).

Employment of Medicinal Baths Without a Physician's Prescription

The Prussian scientific deputation for medical affairs has been asked by the minister to give an opinion on the question, whether there is any objection from the standpoint of the public against the administration of medicinal baths without a physician's prescription. The deputation comes to the following conclusion: It is not practicable to require a medical prescription for every application of systematic treatment in the bathing places and bath institutes of the large cities. On the other hand, it is desirable that bathing institutes under the advice of their physician should be required to demand medical prescriptions for special forms of treatment, and that they warn their patrons in a proper way by circulars and bathing cards and placards against taking systematic extreme courses of treatment without the directions of a physician.

A Chair for Natural Therapy Refused

The syndicated *sickness insurance* companies of Saxony, the local Krankenkassen, have recently petitioned the minister *of education* of Saxony for the establishment of a professorial chair for natural therapy (Naturheilkunde), in the university of Leipsic. As was to be expected, this proposal was refused for the following reasons: A new professorship can be established only for a special independent department of knowledge, which is not yet represented in the university or but insufficiently. The so-called natural therapy, however, cannot be regarded as such a branch of knowledge, as it does not rest on an independent systematic basis and is not a distinctive field of knowledge, separated from other departments of medicine, but is rather a more or less arbitrary collection of a number of special experiences regarding the curative action of certain natural forces. The natural curative methods of this sort are by no means neglected by the representatives of medical science, but for a considerable time have been employed in suitable cases and in an ever increasing proportion. Their employment in the clinics of the Leipsic university is already provided for to a considerable extent at the present time, and marked expansion is already planned.

Ethics of Advertising by Sanatoriums

The physician who was the owner of a certain sanatorium was condemned by a Prussian court of honor for the frequent advertisement of his sanatorium (in all six times). The superior court reversed the decision and acquitted the accused. The content of the advertisement was not objectionable and moreover the matter concerned a sanatorium in a large city which could not exist without occasional advertisement. For this reason the action of the accused could not be regarded as unprofessional.

Marriages

JAMES BIRCKHEAD, M.D., New York City, to Miss Helene Bilodeau of Montreal, Que., at Wilmington, Del., October 31.

SAMUEL T. NICHOLSON, JR., M.D., Bonne Terre, Mo., to Miss Mary Carter Peyton of Newcastle, Del., November 4.

FREDERICK J. ZEIGLER, M.D., Portland, Ore., to Miss Anne Elizabeth Midlam of Oregon City, Ore., November 8.

WILLIAM BURKE, M.D., to Miss Bertha A. Cooke, both of Greenwich, Conn., at Waterbury, Conn., October 31.

GEORGE HOWARD HUNGERFORD, M.D., Philadelphia, to Miss Harriet E. Schrock of Norritonville, September 21.

BERNARD VINCENT MCDERMOTT, M.D., Stuart, Neb., to Miss Echo Lenore Shank of Massena, Ia., October 25.

FREDERICK O. GRONVOLD, M.D., Adams, N. Dak., to Miss Louise Baasen of New Ulm, Minn., October 16.

OSCAR CHARLES REEVE, M.D., New York City, to Miss Grace Howard Fisher of Ossining, N. Y., October 30.

ARTHUR FREEBORN CHACE, M.D., to Miss Kathleen Stirling Fletcher, both of New York City, November 2.

DON P. PETERS, M.D., to Miss Retta A. Mencke, both of Baltimore, at Wilmington, Del., October 28.

WILLIAM F. DUGAN, M.D., Campbell, Neb., to Miss Opal L. Dearing of Grand Island, Neb., October 30.

WALTER T. DANNREUTHER, M.D., to Miss Anna R. Tower, both of New York City, October 26.

WILLIAM G. MORTON, M.D., to Miss Katherine Christiansen, both of Iowa Falls, Ia., recently.

ALLEN R. HICKMAN, M.D., Douglas, Ariz., to Miss Keeler of Los Angeles, Cal., October 19.

BRADY DEXTER EPLING, M.D., to Miss Louise Greene, both of Petersburg, Ill., November 2.

Deaths

William Nye Swift, M.D. Harvard Medical School, 1881; a charter member of the staff of St. Luke's Hospital, New Bedford, Mass., and president of its staff in 1910; an unstinting contributor of time and money to that institution and the Hospital for Consumptives at Sassaquin; a member of the American Medical Association and the American Academy of Medicine, and for fourteen years city physician and a member of the Board of Health of New Bedford; died at his home, October 27, aged 57.

John Bradley Crandall, M.D. University of Vermont, 1862; a member of the American Medical Association and formerly president and secretary of the Rock River Valley (Ill.) Medical Association; assistant surgeon of the Thirteenth Vermont Volunteer Infantry during the Civil War and on duty at the Baxter and Sloan General Hospitals; a member of the Chicago Commandery of the Loyal Legion; died at his home in Sterling, Ill., October 21, aged 71.

Henry Alfred Robbins, M.D. University of Pennsylvania, Philadelphia, 1861; a member of the American Medical Association and American Therapeutic Association; professor of genito-urinary diseases and dermatology in Howard University, Washington, D. C.; dermatologist to the Washington Hospital for Foundlings; a medical cadet and assistant surgeon throughout the Civil War; died at his home in Washington, October 26, aged 72.

Charles William M. Brown, M.D. Harvard Medical School, 1876; a member of the American Medical Association and vice-president of the Medical Society of the State of New York; dean of the medical faculty of Elmira, N. Y.; a specialist on diseases of children and a member of the consulting staff of the Arnot-Ogden Memorial Hospital; died in that institution, October 29, from pneumonia, following an attack of influenza, aged 63.

Ovidus Arthur Griffin, M.D. University of Michigan, Ann Arbor, 1899; formerly demonstrator of ophthalmology and otolaryngology in his alma mater; a member of the American Medical Association and Academy of Ophthalmology and Otolaryngology; examining oculist and aurist to the Washtenaw County (Mich.) U. S. pension examining board; died at his home in Ann Arbor, October 28, from spinal meningitis, aged 39.

Alexander F. Pringle, M.D. McGill University, Montreal, 1880; of Northfield, Minn.; formerly a member of the American Medical Association; oculist and aurist to the Minneapolis state schools for the deaf, and blind, and feeble-minded, was taken ill at his old home in Cornwall, Ont., on his return from Europe, and died October 27, from heart disease, following an attack of nervous prostration, aged 58.

Charles H. Gundelach, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1865; for a quarter of a century a member of the staff of Good Samaritan Hospital of St. Louis, and later a member of the attending and consulting staff of the St. Louis Children's Hospital; a member of the Academy of Science; died at his home in St. Louis, October 23, from heart disease, aged 74.

John J. Hamilton, M.D. Fort Wayne (Ind.) College of Medicine, 1881; formerly a member of the American Medical Association and secretary of the Marshall County (Ind.) Medical Society; coroner of Marshall County, Ind., for six years; formerly local surgeon of the Oregon Short Line at Caldwell, Idaho; died at his home in Rolfe, Ia., September 4, from diabetes, aged 58.

Oscar Henry Benker, M.D. Illinois Medical College, Chicago, 1904; of St. Louis; a member of the American Medical Association; a specialist on tuberculosis and recently appointed consul of Switzerland in St. Louis; who had landed in New York from Europe, October 23; died suddenly in a railway station in New York City, from cerebral hemorrhage, aged 46.

John Charles Hoye, M.D. Western Reserve University, Cleveland, 1888; a member of the Medical Society of the State of Pennsylvania; of New Castle; who was found unconscious, November 3, in New York City, with a fractured skull and other injuries, the result, it is believed, of an attack by thugs; died in Bellevue Hospital on the same day, aged 45.

James Henry Thompson, M.D. University College of Medicine, Richmond, Va., 1908; a member of the Medical Society of Virginia; assistant surgeon to the Pocahontas (Va.) Collieries Company, while en route to his old home in Watsonville, Cal., died in a sleeping car in West Virginia, October 24, from heart disease, aged 28.

James Richard Richards, M.D. Rush Medical College, 1900; for several years a practitioner of Thermopolis, Wyo.; formerly a member of the American Medical Association; who moved to San Diego, Cal., three months ago; died in the office of a physician in that city, September 19, from cerebral hemorrhage, aged 42.

Richard H. Parker, M.D. University of Pennsylvania, Philadelphia, 1858; a member of the Medical Society of Virginia; assistant surgeon in the Confederate service throughout the Civil War; one of the oldest practitioners of Portsmouth, Va.; died at his home, October 26, from cerebral hemorrhage.

William Brown Martin, M.D. Rush Medical College, 1888; a member of the American Medical Association; died at his home in Sherrard, Ill., November 3, from the effects of an incised wound of the throat, self-inflicted, it is believed with suicidal intent, while temporarily insane, aged 51.

Frederick A. King, M.D. New York Medical College, New York City, 1863 (license, Utah, 1894); a pioneer practitioner of Weber County, and for twenty-two years a practitioner of Hooper; died in the Dee Memorial Hospital, Ogden, October 18, two days after a surgical operation, aged 68.

Benjamin Brindley Eads, M.D. Jefferson Medical College, 1891; a member of the American Medical Association; a member of the surgical staff of Cook County Hospital and Illinois Hospital Dispensary; died at his home in Chicago, November 10, from nephritis, aged 41.

Daniel B. Wyatt, M.D. New York University, New York City, 1863; a member of the State Medical Society of Wisconsin; for more than forty years a practitioner of Fond du Lac; died at his home in that city, October 26, from arteriosclerosis, aged 76.

John Frank Mackey, M.D. Medical College of the State of South Carolina, Charleston, 1860; a surgeon in the Confederate service during the Civil War and the oldest practitioner in Lancaster, S. C.; died at his home, September 26, aged 75.

Moritz Halldorson, M.D. University of Copenhagen, Denmark, 1882; for several years a surgeon in the Danish Navy; a native of Reykjavik, Iceland; died at his home in Park River, Minn., October 20, from cerebral hemorrhage, aged 56.

Cleveland V. Frederich, M.D. Northwestern University, Chicago, 1909; of Springfield, Minn.; died in Mercy Hospital, Chicago, October 24, from tuberculosis of the spine, aged 26.

appear in consequence of the drainage of swamp lands, the conditions of improved civilization bring about steadily increased opportunities for anopheles to breed, as by the construction of irrigation ditches, railroad embankments, mill dams, etc., so that it would not be surprising if malaria were increasing rather than decreasing in the United States. It would seem that the mosquito crusade is bound to become an extremely important matter within the next few years.

The campaign against malaria in Panama is made the subject of two communications, one by Colonel W. C. Gorgas, and the other by J. A. Le Prince, Chief Sanitary Inspector, Panama Canal Zone. Colonel Gorgas expresses the view that the work already done at Ismailia, Havana, Panama, and at other places has demonstrated that malaria can be eventually banished from the worst places in the tropics at no very great expense. He thinks that the individual farmer can protect himself from tropical malaria for less than what he expends in protecting himself against the cold of Dakota or Manitoba.

W. T. Prout in describing antimalarial measures in Jamaica states that deaths from malaria represent nearly one-fifth of the total deaths. Hitherto little has been done to prevent the disease, but as the result of an expedition from the Liverpool School of Tropical Medicine, public opinion has been aroused and an appropriation of $25,000 has been made to carry on the work. The efforts to prevent malaria in British tropical territory receive extensive notice. This part of the work is illustrated by a number of plates. "The Prevention of Malaria in War" is the subject of a very practical chapter by Colonel C. H. Melville.

Altogether the work contains a large amount of information involving painstaking and accurate research; the book is recommended to sanitarians and to all who need to inform themselves on this important department of preventive medicine.

SPECIAL MESSAGE OF GOVERNOR HERBERT S. HADLEY REGARDING THE CONTROL AND PREVENTION OF TUBERCULOSIS, TOGETHER WITH A REPORT OF THE VOLUNTARY COMMISSION TO THE FORTY-SIXTH GENERAL ASSEMBLY, 1911. J. Hal. Lynch, Secretary, 625 Locust St., St. Louis. Paper. Pp. 99.

In July, 1910, Gov. Herbert S. Hadley of Missouri asked a number of men and women who had been prominent in the investigation of public questions to serve as a voluntary committee to investigate the prevalence of tuberculosis in the state of Missouri, the causes of the disease and the best method of controlling it. The report, transmitted to the legislature in a special message, was printed by the state. It is in three parts; viz., a report on the morbidity and mortality caused by this disease; an estimate of the economic loss caused by it; and recommendations as to its prevention and cure. As to its prevalence, the committee reports from 5,000 to 5,500 deaths per year from this disease in Missouri. In the cities the death-rate was 173 per 100,000. In small towns and country districts, it was estimated at one death in every six, making the average for the state one in every ten deaths. It was found impossible to estimate accurately the number of cases of the disease. 18,000 being the minimum and 30,000 the maximum. The estimated loss through this disease was $31,000,000 per year. The committee recommended enlarged powers for the state board of health; the appointment of a tuberculosis commission; the passage of an enabling act for the erection and maintenance of county sanitariums; segregation of tuberculous inmates of state institutions and prisons; and the passage of a state housing law.

NATURE SKETCHES IN TEMPERATE AMERICA. A Series of Sketches and a Popular Account of Insects. Birds, and Plants, Treated from Some Aspects of Their Evolution and Ecological Relations. By Joseph Lane *Hancock*, M.D., F.E.S. Cloth. Price, $2.75 net. Pp. 431, with 227 illustrations. Chicago: A. C. McClurg & Co., 1911.

By sketches of insect, bird and plant life, Dr. Hancock has endeavored to illustrate, in its philosophic aspects, the doctrine of the organic evolution which has brought them to their present form, and also to throw some light on their present ecologic conditions. His sketches and studies are based on personal observation and are presented with a rare combination of literary charm and simplicity with sound scientific information. Dr. Hancock's frank interest and joy in his subject is infectious, and makes the book one which may be read with entertainment and profit. The book is profusely illustrated with photographs and sketches by the author.

Medicolegal

Validity of Provision for Medical Examination and Treatment of Prostitutes

(People vs. Fox (N. Y.), 129 N. Y. S. 646)

The First Appellate Division of the Supreme Court of New York holds constitutional the enactment of that state providing for the medical examination and treatment of prostitutes. This provides that they shall, after conviction as vagrants or disorderly persons, be taken to a room adjacent to the courtroom, and there be physically examined by a woman physician of the department of health detailed for that purpose. After such examination, the physician making the same shall promptly prepare and sign a written report to the court of the prisoner's physical condition, and if it thereby appears that the prisoner is afflicted with any venereal disease, which is contagious, infectious or communicable, the magistrate shall commit her to a public hospital having a ward or wards for the treatment of the disease with which she is afflicted, for detention and treatment, etc.

The lower court held that this act violated the constitution, in that it directed the detention of the accused without due process of law, in that the nature of the sentence after conviction was made to depend on the report of a physical examination without an opportunity for a hearing on the facts entering into the report. But the Appellate Division thinks that a construction can be put on the statute which will save it. It says that it would not be said that a person who had contracted a contagious or infectious disease in the practice of drunkenness and debauchery requiring charitable aid to restore him to health should be subjected to punishment for his condition, but rather that medical assistance should be extended and his reformation attempted; yet by the statute such a person is a vagrant. It is recognized by those who have made a study of criminology that prostitution is evidence of insanity or degeneracy, and the offenses or conditions specified in these sections require more the supervision of the health and reformatory authorities of the state than commitment to penal institutions. The detention of a person within these provisions of the statute is not so much a punishment for a crime as a means for the reformation or protection of the individual who has become a vagrant or disorderly person and for the conservation of the public health, and the jurisdiction given to the courts of inferior criminal jurisdiction over vagrants and disorderly persons is therefore more reformatory than penal. When a person is brought before a judicial tribunal charged with this condition, he is to be subjected to such detention or treatment as will be best calculated to accomplish the end in view, and the statute should be considered in view of what seems to have been the evident intention of the legislature in enacting the provisions in question.

Certainly, if it had appeared that the accused was suffering from small-pox, cholera, or typhus fever, or any other infectious disease, the court would not have been bound, nor would it have been justified, in committing her to a public institution which would endanger the lives of all its inmates, or in discharging the prisoner so infected to communicate the disease to all of the inhabitants with whom she should come into contact. The nature of venereal diseases is such that the result of infection is more serious than of the ordinary contagious or infectious diseases that are so carefully guarded against. To deny the power of the legislature to provide for the isolation or detention of persons suffering from a venereal disease until cured, or until the danger of infection has passed, would prevent the health authorities from removing from a crowded tenement house a person suffering from small-pox, scarlet fever, or tuberculosis, or the quarantine authorities from removing to a hospital a passenger arriving at a port suffering from cholera or plague—precautions that have always been recognized as within the police power and justified by the danger of contagion from those suffering from such diseases.

There is nothing in this statute which in terms makes the report of a physician binding on a magistrate, and nothing which prevents a magistrate from hearing testimony as to the prisoner's condition, or from determining the question as to her condition contrary to the report of the physician. It is true that the mandatory word "shall" is used rather than the permissive word "may," or "has authority to" commit. But the instances are many in which courts have treated the mandatory word as merely permissive when necessary to sustain an act or accomplish the purpose which was clearly intended.

Considering all the provisions of this article of the statute, it seems to the court that they are provisions for the health of the community, and were intended to ameliorate the condition of one suffering from one of the most terrible diseases, and to protect the community from infection.

Then, the objection was made to this act that it relates to women only, and not to men, who are suffering from these diseases; but it was clearly a question for the legislature to say whether the public interests or the public health required that a woman afflicted with a venereal disease should be treated differently from a man. Moreover, public prostitution applies only to women, and every person convicted of public prostitution is within the act. Nor does the court think that this can be said to be an unreasonable exercise of the police power.

Large Damages Approved for Personal Injuries

(Zibbell vs. Southern Pacific Co. (Cal.), 116 Pac. R. 513)

The Supreme Court of California affirms in this case a judgment for the plaintiff for $70,000 for damages for personal injuries. The jury's verdict in favor of the plaintiff was for $100,000, but from that $30,000 was remitted. At the time of his injury the plaintiff was 27 years old, in perfect health, and earning about $2,500 a year in the breeding and training of horses. By the accident his right heel was crushed and torn to such an extent as almost to sever it from the foot. His right leg was fractured between the knee and ankle, and the flesh on that leg between the thigh and ankle was torn, cut, bruised and lacerated. His back, sides and shoulders, face and head were cut, bruised and wounded, and he sustained a severe nervous shock. Moreover, by reason of his injuries his left arm had to be amputated below the shoulder, his right hand at the wrist, and his left foot a short distance above the ankle. So the court declares that, while the damages awarded in this case were very great, the shocking character of the injuries, the loss of both arms and one leg, the permanent loss of earning capacity, the inevitable disabilities and the suffering endured, and necessarily to be endured for more than 38 years, which the mortality tables showed was the expectancy of his life, presented a case in which the injuries were as grave as the damages great, or, at least, a case in which there was no such marked disproportion between the character of the injuries and the award made for them as to suggest at once that the award was influenced by prejudice, passion or corruption.

Society Proceedings

COMING MEETINGS

American Physiological Society, Baltimore, Dec. 27-30.
American Public Health Association, Havana, Cuba, Dec. 4-9.
Southern Surg. and Gynecol. Assn., Washington, D. C., Dec. 12-14.
Western Surg. and Gynecol. Assn., Kansas City, Mo., Dec. 18-19.

MINNESOTA STATE MEDICAL ASSOCIATION

Forty-Third Annual Meeting, held at St. Paul, Oct. 4-6, 1911

The President, Dr. J. W. Robertson, Litchfield, in the Chair

A list of the officers elected was published in The Journal, Oct. 14, 1911, p. 1296.

Medicine in Minnesota

Dr. J. W. Robertson, Litchfield: It seems to be the consensus of opinion among the members of the profession in Minnesota that medical education shall consist of, first, graduation from a state high school; second, two years in science and arts in some college or university; third, four years in the study of medicine; fourth, one year in hospital training. I think that this course of study will meet the approval of a large majority of the medical men of the state. I also believe that it is to the best interests of humanity that we have a physician in every county of the state to be supervisor of health in schools so that the many abnormalities and physical defects of children can be observed, tabulated and treated during the growing period of childhood.

Carcinoma of the Lip, Mouth and Pharynx

Dr. E. H. Beckman, Rochester: Of 210 patients operated on for carcinoma of the lip during the past six years, only fifty-two presented themselves within six months of the beginning of the disease. The extensive "block dissection" of Crile should be done at an early period in the disease before glandular involvement has taken place. We have performed 25 "block dissections" in the past three years with no operative mortality, so that the operation is not so dangerous as at first supposed. Better results in the treatment of carcinoma of the lips, mouth and pharynx seem to lie in a realization of the hope for an earlier diagnosis and a more extensive removal of the lymphatic glands into which the area of the cancer drains.

Carcinoma of the Gastro-Intestinal Tract

Dr. William J. Mayo, Rochester: From Oct. 1, 1897, to Oct. 1, 1911, 1,230 patients with carcinoma of the gastro-intestinal tract were operated on at St. Mary's Hospital. Of these 848 involved the stomach, and the radical operation was done in 296, or 34.9 per cent. of the cases. The mortality is 5 to 8 per cent. at present. Statistics in this series show that over 25 per cent. of patients who recovered from the operation and whose present condition is known, are alive and well over five years. There were fourteen cases of cancer of the small intestine, and five, or 35.7 per cent., were submitted to radical operation. Of the 214 cases of cancer of the large intestine nearly three-fourths were operated on radically. Fifty per cent. of those who recovered from the operation and whose present condition is known, are alive and well over five years. The operative mortality in these cases is now less than 10 per cent. Thirty per cent. of the 163 patients with cancer of the rectum, who recovered from the operation and whose present condition is known, are alive and well over five years. The mortality is now less than 10 per cent. Cancer, as cancer in the stomach, does not early produce definite symptoms; only when its situation makes a palpable tumor, or causes obstruction, can a probable diagnosis be made in the beginning of the disease. Malignant disease in any part of the large intestine proximal to the middle of the transverse colon is best treated by removal of all the large intestine up to the growth, doing ileocolostomy, beyond the middle of transverse colon resection in continuity. In cases of cancer of the ampulla of the rectum, a permanent colostomy should be made at the primary operation, and at a second operation after the lower segment has been properly cleansed, the entire rectum should be removed from behind. This procedure gives the patient moderate control and the best chance for a permanent cure. For high rectal or recto-sigmoid cancer the abdominal combined method is preferable. The perineal operation should be reserved for cancer of the anal region. In five instances we have discovered rectal cancer early enough to permit a purely local operation. The pessimism of the medical profession as regards malignant disease of the gastro-intestinal tract is not justified by the facts. Failure to make a diagnosis while the disease is still local, and not any peculiar malignant tendencies in the presence itself, accounts for the fatal character of cancer in this region. Lack of examination rather than lack of knowledge is responsible for mistakes in diagnosis.

DISCUSSION

Dr. J. E. Moore, Minneapolis: I heartily endorse the principles laid down and the treatment advocated in Dr. Beckman's paper. The erroneous opinion has widely prevailed that carcinoma of the face is not so malignant as in other parts of the body, and that radical treatment is not necessary. This is due to the fact that cancer of the face is recognized earlier than in any other part of the body, and earlier operations have been performed. This strengthens the contention of the surgeon that carcinoma is originally a local disease. Fortunately for the surgeon and humanity, carcinoma of the small intestine is comparatively rare, for results of surgical intervention are not nearly so good here as in other parts of the intestines. The mortality of carcinoma of the stomach without operation is 100 per cent., and if, as Dr. Mayo has demonstrated, 25 per cent. can be saved by operation, it surely requires no argument to establish its value. Carcinoma of the large intestine is an encouraging field. The diagnosis is not so difficult, and results are remarkably good. The large bowel is remarkably tolerant of surgery. There is one point made by Dr. Mayo that I wish to endorse most emphatically, because all surgeons do not agree with him, and that is in reference to the value of colostomy in carcinoma of the rectum. This comparatively simple operation gives immediate relief and enables us to perform radical operations on the lower bowel that we could not do otherwise.

I have patients living and well to-day on whom I performed colostomy fifteen years or more ago who could not have been saved in any other way. There is another point in this paper that should encourage those who are disposed to be pessimistic on this subject, and that is the large percentage of tumors of the cecum and sigmoid presumably malignant that prove to be benign when put under the microscope.

Visceroptosis

Dr. Leroy Crummer, Omaha: This is a condition and not a disease, symptoms occurring in this condition are dependent on changes in function and not on changes in structure. The physical stigmata are the phthisical chest, the long abdomen and the narrow pelvis. On abdominal examination, the colon can be palpated as a narrow, tender cord in more or less of its entire extent from the cecum to the rectum. The right kidney can always be palpated and generally the left. The stomach on inflation is found vertical and not dilated. These signs are found in the routine examination in the large percentage of women, many of whom present absolutely no symptoms of any kind.

Following, however, a period of stress with its attendant malnutrition and loss of weight, the symptoms become manifold. The usual symptoms which first present themselves are in the stomach and are described as a sensation of "chronic grief." The bowels soon become affected, and in early cases an alternating diarrhea and constipation and finally persistent constipation, and ultimately attacks of colica mucosa occur. A secretion of mucus in the bowel is practically a constant symptom. Many other symptoms occur in the course of the condition and any form of abdominal distress, palpitation, backache, coxalgia, or any symptoms of so-called neurasthenia demand an examination for the physical signs of this condition.

These patients should never be operated on for anything except definite pathologic conditions, as the ultimate results of operative interferences of visceroptosis itself are bad. The diagnosis should be made directly by finding these stigmata in cases having vague abdominal symptoms. Differentially tuberculosis and hyperthyroidism must be considered. There is no direct line of separation between hyperthyroidism and this condition, as many symptoms exist in common. It is very difficult to pick out those cases in which there is a real surgical lesion and this diagnosis must be made only on indisputable evidence.

Etiologically, a past history of chlorosis is found in a large proportion of cases, but of most importance is an exact history of stress followed by malnutrition. The prognosis is good when the cases are recognized during the early period and even in the severe cases under proper treatment there is a return to a comfortable existence without, however, there being any indefinite changes in visceroptosis. As far as treatment is concerned, the principles of the Weir Mitchell rest treatment with forced feeding give the best results. Belladonna is practically a specific in most cases.

DISCUSSION

Dr. J. E. Moore, Minneapolis: Many years ago Glenard enlightened the profession concerning visceroptosis, but the average physician paid very little attention to the subject. With the development of abdominal surgery, surgeons began to take note of these physical defects and very naturally concluded that these defects were the cause of the patients' suffering, and that the best means of treatment would be mechanical; hence, all the scars mentioned by the essayist. It is necessary in surgery, as in everything else, to go to extremes to find what the happy medium is. These operations did only temporary good, and on the whole were very disappointing, but they did not kill people, and while they were rather hard on the present generation, they have enabled us to demonstrate that operations are not curative in these conditions, and we have relegated these patients to the physician where they rightfully belong, and have very materially helped the physician to establish the ground on which he now stands. In this way these operations, now discredited alike by surgeons and physicians, will prove of untold value to future generations. These scars should not be placed to the discredit of surgeons but should be looked upon as milestones of his progress, for, having demonstrated the inefficiency of surgery, he honestly turns these patients over to the physician. Real surgeons no longer perform these operations. It is only the "would-be" surgeon, the one without personal experience, or the honesty or ability to profit by the experience of others. Our worst difficulty now is that half-baked physicians are still referring these cases to us for operation.

Polycystic Disease of the Kidney

Dr. Donald C. Balfour, Rochester: In the series of six cases observed in St. Mary's Hospital, four were females and two were males. In the majority of cases symptoms are absent in the early stages, but as the process advances signs of renal insufficiency become evident, such as pain of a varying character, frequent micturition, bloody urine, and, occasionally, temporary retention. In the later symptoms constitutional disturbances occur, e. g., loss of weight, reflex disorders of the stomach, secondary cardiac hypertrophy, arteriosclerosis, uremia and general failing health. The diagnosis rests mainly on the presence of tumor in one or both flanks. If both kidneys are involved, polycystic disease of the kidney may be diagnosed almost positively. Differentiation is made between this condition and hydronephrosis, pyonephrosis, and hypernephroma by means of ureteral catheterization. The affection is ultimately fatal from gradual destruction by pressure of the normal kidney tissue, although as the secreting structures of the kidney are markedly resistant to outside pressure, patients may live comfortably for some time after the cystic degeneration is fairly advanced. If the condition is diagnosed as bilateral, surgical measures are useless, and treatment along general lines should be instituted. If the kidney on the opposite side is grossly unaffected, nephrectomy may be indicated, but the mortality following this procedure makes it almost prohibitive. In doubtful cases, exploratory operation should be made. In two of the cases reported in this series some of the cysts had attained a size sufficient to make exploration advisable. One case was explored on a diagnosis of ovarian cyst; the other on a provisional diagnosis of partial rupture of the kidney, as the tumor was noticed immediately after a severe fall.

Fracture of the Elbow

Dr. Owen W. Parker, Ely: Out of the last 4,600 injuries, 324 were fractures of which only seven involved the elbow. These fractures are much more common among children. Great care is necessary in examining all injured elbows; otherwise many fractures will be overlooked. On account of the irregularity of the lower end of the humerus, a large variety of fractures are met. In treatment, the position used by us in fractures of the elbow is either the right-angle position or that of acute flexion or hyperflexion. I prefer hyperflexion in all fractures of the lower end of the humerus, except the intercondylar. I always attempt to hyperflex the arm up to 30 or even 20 degrees. If the swelling is so great as to interfere with hyperflexion and the safety of the pulse, wait a few days and then hyperflex. Hyperflexion is maintained by dressing either with adhesive straps or by means of a roller bandage as used by Ashhurst, at no time using any splint. Splints are used whenever treating in the right-angle position. Full flexion, the most valuable function of the joint, is fully preserved, whereas in a right-angle position there is more apt to be some loss of flexion. Extension is less valuable than flexion and is more easily regained. It may be regained early or not for several months. It is important to preserve the carrying angle. Do not use early forcible manipulation; wait until the third week when union is fairly firm and then begin gentle passive motion, extension having in the meantime been gradually increased.

Tuberculin in the Treatment of Scleritis

Dr. C. N. Spratt, Minneapolis: I have had one case of episcleritis and six of keratoscleritis treated with tuberculin. Five patients were women and two were men. The ages of the former were between 31 and 38 years. One man was 43, the other was 55 years of age. The right eye was the one affected five times and the left twice. Two of the patients had previous attacks in the other eye. All were in good health. The location of the infiltration was, two on the temporal, two on the superior temporal, one on the nasal side, one above and one below the cornea. In three cases the entire anterior part of sclera was involved. All patients gave a general reaction to Koch's old tuberculin. Lowest febrile reaction was 100.2; highest, 102.6 F. Maximum reaction was twelve hours in two cases, thirty-six in another and an average of twenty-four hours in the others. A local reaction in the affected eye followed in six cases. In two cases Denys' bouillon filtrate was used, the initial dose being 1/1,000 mg. In the other five the bacillus emulsion was used, with an initial dose of 1/100,000 or 1/1,000 mg. The dose was slowly and carefully increased, avoiding as far as possible signs of general or local reaction. Any redness about point of injection or rise of ½ degree in temperature was considered an indication that the point of intolerance was reached. The dose was not increased or repeated until the temperature was normal for forty-eight hours. In one severe case cure was obtained in six months after forty-five injections, the maximum dose being 20 mg. bouillon filtrate. In a severe case of ten months' duration a cure was obtained in three months after twenty-two injections, maximum dose 1/50 mg. of B. E. In a case of seven weeks' duration the patient was cured in ten weeks after twenty injections maximum dose 1/50 mg. A fourth patient with trouble of eight months' standing and under treatment three months has received twenty-six injections and is improving. In a case of five months' duration the patient was cured in three months with eighteen injections of B. E., maximum dose 1/100 mg. In a sixth case of eight months' duration the patient was much improved after the diagnostic dose of 10 mg. O. T. He was sent home to have the treatment continued by his physician. The seventh patient, with episcleritis of one month's duration, is still under treatment and is improving.

KENTUCKY STATE MEDICAL ASSOCIATION

Fifty-Sixth Annual Meeting, held in Paducah, Oct. 24-26, 1911

(Concluded from page 1635)

President's Address: United We Stand, Divided We Fall

Dr. J. G. Carpenter, Stanford: We want better organization of the physicians of the country through their local organizations, that the advantage of cooperative study may be obtained; that the lot of the physicians may be made better; that better laws may be enacted; better sanitary conditions maintained; the science of medicine advanced more rapidly, and the mission of the physician as he sees it better fulfilled. Our conception of the physician is that he should be a leader in the community; the cleanest man in it; clean in speech; clean in his morals; a leader of opinion and the best cultured. The time is at hand when the physicians are to have the leading part in the destiny of the country. Now, the problems are social and moral and psychologic, and a different class of men should be sent to the legislatures. In this physicians and teachers must take a hand by impressing on their legislators the worth of health measures before them and helping to get men into the legislatures who will give proper consideration to these measures.

The organization of a weekly or bi-monthly graduate course in every town and county should be brought about by physicians. Every society meeting is a graduate course. This is the golden opportunity of the practitioner to gain knowledge from and impart knowledge to others.

The State Institutions and a Plea for a More Perfect Equipment

Dr. H. P. Sights, Hopkinsville: I would like to refer to one simple advancement in the management of the insane. This is the complete abolition of all forms of mechanical and medical restraint that were thought absolutely necessary in former years. The state institutions are conducting training schools in which the best methods of handling the insane by personal care are taught, gradually educating the people to the fact that an insane person is a sick-minded, not a deformed-minded person. Autopsies and laboratory work and study of cases will develop trained alienists who shall stand as a credit to the present methods of conducting state institutions. A psychopathic hospital is an absolute necessity to treat and care for patients, as it affords the best opportunity for recovery of the acute cases of insanity.

DISCUSSION

Dr. Brooks H. Beebe, Cincinnati: If the legislators in their respective communities were approached in the proper manner and in the right spirit with regard to the better care and handling of the insane, I believe there is not one of them who will go counter to the physician. They are non-political when it comes to health laws, and you have control of the situation if you simply get together.

Dr. W. E. Gardner, Lakeland: While a great many improvements have been made in our asylums during the past few years, such as the abolition of non-restraint, more liberal amusements and recreation for patients, and the establishment of training schools for nurses, making provision for the care and isolation of tuberculous patients, and a more systematic examination and study of cases, yet all these things amount to very little so far as bringing the institutions up to standard is concerned and to what can really be called state hospitals for the insane. We want a hospital for the sick in each one of these institutions. We should have a psychopathic department in each one of the institutions.

Dr. George P. Sprague, Lexington: The number of attendants, the number of physicians and the number of employees generally throughout the institutions for the insane of Kentucky are too small, so that there is not enough supervision of patients. There is urgent need for reform in this respect. There should be more nurses, more physicians, more employees. It would be considered criminal in a well-managed hospital to have such conditions as obtain in our state asylums, and these things obtain simply because we do not know what the conditions demand, and do not voice that demand to our legislators.

Expert Testimony in Courts of Law

Dr. Dudley S. Reynolds, Louisville: Expert testimony in courts of law is extremely variable. It is a well-known fact that hypotheses stated by different persons lose their original character and clearness, and are therefore well calculated to mislead the expert witness. Two or more experts may differ widely in their answers to a hypothetical question stated in the same language; when personal examination by them would lead to identical conclusions, and these conclusions might destroy the hypothesis relied on by the establishment of facts, wholly different from those on which the hypothesis was predicated. Much of the ill-repute of medical expert testimony in courts of law is due to the ignorance of the judges, and the unfortunate, not to say dishonorable methods of attorneys who are employed to contest the facts and pervert truth and justice.

DISCUSSION

Dr. W. W. Anderson, Newport: Unfortunately, under the methods of conducting testimony and taking sides, the physician or witness is impelled to take sides, and unfortunately, physicians can be found who are willing to take sides in a case rather than go straight ahead with the truth in the case.

If we men, who are not specialists and not experts in all matters of medicine, will be honest enough when we get on the stand to disqualify ourselves until we are qualified to speak as experts, we will save our reputations and the reputations of our fellow-practitioners. We should take no side; we should take no interest in the verdict. It is none of our business, except to state the case to the jury clearly and simply, and not permit the attorneys to make us appear to say something that we did not say.

Dr. J. N. McCormack, Bowling Green: The condition of the profession in regard to expert testimony is the result of the vicious system which lawyers have brought on us. We are not responsible for it. The medical expert is just as important as the judge, and he ought to be selected carefully for his scientific attainments, first, and second, on account of his legal knowledge. If we selected judges as we select experts, our courts would be in bad shape, and yet we are selecting medical men in a haphazard manner, allowing any man to qualify as an expert—and he is selected by the lawyer.

Dr. C. Z. Aud, Cecelia: The testimony of the expert often is biased. Many patients get well a year or so after a verdict has been rendered and damages have been recovered.

Dr. Virgil E. Simpson, Louisville: As long as human nature is as it is, we are going to have malingering, and there is a possibility of physicians being honestly mistaken in giving a professional opinion. The hypothetical question is a nuisance, and whenever it is possible for an expert to make an examination of the conditions as they exist, then there is no longer any necessity for hypothesis. If doctors, in their answers to questions which in the very nature of the phraseology require yes or no for an answer, were entitled to the privilege of explaining the responses, they would be much less embarrassed than they are.

Dr. Curran Pope, Louisville: If the lawyer insists on putting ridiculous questions which have nothing to do with the case, then I give him right straight back what he is after. We must be guarded as to our replies to questions. In the first place, we must know something. In the second place, we must be honest enough to admit that there are some things we do not know.

Care of the Insane Criminal

Dr. Milton Board, Louisville: An institution for the criminal insane should be established in each state for various reasons: 1. That those who plead insanity as an excuse for crime and succeed in convincing the jury that they are insane, shall not go scot-free to prey again on the public, but may be confined in a safe place where, under the inspection of competent alienists, their fraud may be uncovered, if they have practiced deception, and where their mental condition may be treated, if they are really insane. 2. For the confinement and treatment of persons who have developed well-marked criminal tendencies.

Intestinal Obstruction

Dr. P. C. Layne, Ashland: I had a case of adynamic ileus in a man, 22 years of age, who had been operated on for acute perforative appendicitis, attended with acute peritonitis. Also a case of strangulated ileus in a child, 1 year of age. The incision revealed an acute intussusception of the ileocolic type, with about 18 inches of the ileum invaginated into the colon. Reduction was accomplished with very great effort, a long appendix excised, and a reef put into the mesentery with the hope of preventing a recurrence. Recovery was complete. Case 3 was an obturation ileus in a man, 57 years of age. Operation revealed a stricture of the bowel at the junction of the descending colon with the sigmoid. Resection of the affected segment, followed by end-to-end anastomosis with a large-sized Murphy button, was performed as quickly as possible; but the shock of the operation was too great; and the patient died about five or six hours later.

Deep Alcohol Injections for Persistent Neuralgia

Dr. E. A. Stevens, Mayfield: My opinion of the method of cure or relief in these cases is that it produces a temporary paralysis which amounts to a physiologic rest. During this rest the nerve temporarily recovers from the neuritis, but is weakened by the previous disease. The history of this treatment indicates that the neuritis will return in from one to three years after the treatment, although some of the cures seem to be permanent.

The Physician's Duty as an Educator in Preventive Medicine

Dr. J. W. Ellis, Masonville: As all reform must come from physicians along health lines, I think they should by public addresses and short newspaper articles instruct the laity.

The Surgical Treatment of Goiter

Dr. John R. Wathen, Louisville: Reasoning from experience with 160 cases, I should say that if we delay operation for several years, administering iodin and electricity until the heart muscle has undergone degeneration, albumin is in the urine, enlargement and fatty degeneration of the liver, lowered blood-pressure, etc., we have waited too long to attempt any radical operative measures, and these patients will generally die. The proper time to advise operation with an expectation of a low mortality and good results is after the thyroid enlargement has begun to manifest the early symptoms of exophthalmic goiter, and has existed for several months or years, with little or no signs of improvement. Early operation, before complications have arisen, offers the best results. I have noted that all patients, in whom I was not able to reduce the pulse in preparatory treatment to below 110, died, and I lost no patient in whom we were able to reduce the pulse to below this figure. This observation was made irrespective of the original condition of the pulse when the patient entered the hospital. In other words, a patient entering the hospital with a pulse of 180, which was reduced before the operation to below 110, always recovered, and one entering the hospital with a pulse of only 120 to 130, which was not reduced below 110, always died. Those cases with intermittent pulse are the most dangerous, irrespective of the pulse-rate. My mortality has not been over 4 per cent., and I have benefited all on whom I have operated, and apparently cured permanently about three-fourths.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

November 2, CLXV, No. 18, pp. 669-708

1 Circulatory Disease, Its Prevalence in New England, Massachusetts and Boston. E. W. Dwight, Boston.
2 *Factors Involved in Production of Arterial Blood-Pressure, Physiologic and Pathologic. W. B. Cannon, Cambridge.
3 High Blood-Pressure and Arteriosclerosis. J. M. Jackson, Boston.
4 *Treatment in Circulatory Disorders. H. D. Arnold, Boston.
5 *Experimental Study of Cause of Death in Acute Intestinal Obstruction. F. T. Murphy and B. Vincent, Boston.

2. **Production of Arterial Blood-Pressure.**—The necessity of keeping in mind both the discharge from the heart and the constriction of peripheral vessels as determinants of arterial pressure is emphasized by Cannon. He says that low pressure may be due not to vasodilatation, but to a weak heart; and any agency used to increase vasoconstrictor tone under these circumstances is likely to stop the heart at once. His attention was recently called to a case of precisely this character, in which the administration of epinephrin to raise the low tension was followed by instant death, the laboring heart was overburdened by the sudden increase of load and stopped immediately. Until the part played by each of the two factors, therefore—the heart and the arterioles—is clearly demonstrated, the intelligent treatment of any disturbance of normal arterial pressure is impossible.

4. **Treatment of Circulatory Disorders.**—Arnold dwells at some length on the benefits to be derived from the proper dietetic treatment of advanced cases of circulatory disturbance. The same method of treatment is useful in earlier stages of this disease. It stands to reason, Arnold says, that

the less the eliminative power of the kidneys is impaired, the greater should be the efficacy of a measure that spared the work of the kidneys. Altogether too little attention has been paid to an excessive protein diet as a potent cause in producing disease of the kidneys. Hearty eating, too little exercise and high-pressure business cares are the factors that hurry many a valuable business man to his grave prematurely. If alcohol is added as a whip to keep up the pace, the progress of the disease is much accelerated. If these cases can be taken early, when high tension is first manifesting itself, the patients can be restored to a life of greater efficiency and relative health, and many a good citizen can be spared for an indefinite period of usefulness. To dietetic regulation in such cases must be added the lessening of the strain of business cares, moderation in all things, regularity of life, sufficient exercise and recreation and thorough elimination from the alimentary canal. The treatment is essentially prophylactic. Drugs play a very minor part.

5. **Cause of Death in Acute Intestinal Obstruction.**—The results of their experimental work are summarized by the authors as follows: 1. Interference with circulation of obstructed intestine is the vital factor in the production of the typical symptoms of acute ileus. The obstruction of the venous return is the most important element in this circulatory disturbance. 2. The acute symptoms are caused by the absorption of a toxic substance which is found in the obstructed intestine. 3. This toxic substance is destroyed by boiling. It is not soluble in water and will not pass through the Berkefeld filter. 4. The formation of this substance probably is not dependent on any vital secretion of the mucous membrane of the intestine. 5. The rapidity of absorption varies, dependent on the patency of the lymphatic channels in the mesentery, and the permeability of the intestinal wall. They conclude, therefore, that this toxic substance is purely bacterial in origin and that the living bacteria with their end toxins, not the putrefactive products nor the chemical poisons, are directly responsible for the profound symptoms and death in acute intestinal obstruction.

These experimental results confirm the clinical observations regarding the importance of any disturbance with the circulation in acute ileus and are in accord with the generally accepted ideas of surgical treatment. The demonstration of the rapidity of absorption, after interference with the circulation, emphasizes the necessity of early operation and restoration of the circulation, as well as the removal of the obstruction. The observation that the toxic intestinal content is not absorbed to any degree through the normal mucous membrane may influence materially the surgical treatment, because if this is so, an enterostomy for permanent drainage is futile, since if there is strong peristalsis to make the enterostomy effective, it would, after the obstruction is removed, force the content beyond the zone of possible absorption. In the cases in which peristalsis is evidently going to be lacking or obstructed on account of the damage to the wall of the intestine, the authors' findings would indicate a resection of the segment involved, rather than any of the various procedures, such as irrigation or massage, because of the danger from the presence of intestine which may act as a reservoir for the formation of the toxic substance, as well as furnish an avenue of absorption. The relatively low toxicity of the free fluid in the abdominal cavity, except in the terminal stages of the obstruction, would suggest that drainage of the peritoneum was indicated only when demanded by some local septic process.

Journal of Arkansas Medical Society, Little Rock

September, VIII, No. 4, pp. 103-126

6 *Management of Fractures and Crushing Injuries of Extremities. J. A. Foltz, Fort Smith.
7 Abdominal Incisions for Exploratory Purposes. C. S. Holt, Fort Smith.
8 Inguinal Hernia. H. H. Kirby, Little Rock, Ark.
9 Case of Splenectomy. P. Hunt, Texarkana, Ark.
10 *Unusual Case of Thyroid or Parathyroid Goiter. R. C. Dorr, Batesville.
11 *Surgical Treatment in Trachoma. R. Caldwell, Little Rock.

6, 10 and 11. Abstracted in THE JOURNAL, July 8, 1911, pp. 156 and 157.

Archives of Pediatrics, New York

October, XXVIII, No. 10, pp. 801-880

12 Radical Removal of Tonsils and Adenoids. C. G. Kerley, New York.
13 *Involution of Thymus by Röntgen Ray. A. Friedlander, Cincinnati.
14 Open-Air Schools and Fresh Air in Schools. L. G. Ager, Brooklyn.
15 Colon Irrigation. The Short vs. Long Tube. Comparison Based on 200 Irrigations. H. T. Machell, Toronto.
16 Further Observations on Soy Bean. J. Ruhräh, Baltimore.
17 *Sugars in Infant Feeding with Special Reference to Maltose-Dextrin Preparations. J. S. Leopold, New York.
18 Investigation of Action of Sodium Benzoate in Artificially Fed Infants. C. G. Grulee and W. H. Buhlig, Chicago.

13. **Involution of Thymus by Röntgen Ray.**—The experiments made by Friedländer gave results which he thinks justify the belief that in the Röntgen ray we have a therapeutic agent of great value in the treatment of enlarged thymus. The fact that in clinical cases of status lymphaticus concomitant changes occur in other portions of the lymphoid tissues of the body, that experimentally he was able to induce changes in the spleen, both go to prove that the Röntgen ray is a valuable agent in the treatment of status lymphaticus itself. For if by exposing only the region of the thymus to the action of the Röntgen ray, one can cause diminution in size of the spleen and of the lymph-nodes, can change a lymphocytic to a normal blood-picture, it would seem that this is a distinct advance in the treatment of status lymphaticus. Certainly, the Röntgen ray is far safer than the dangerous operation of thymectomy. Apparently it is not followed by subsequent ill effects, either. Thus it is interesting to note that the first patient treated by the Röntgen ray, over six years ago, is an excellent condition. He shows absolutely no evidence of anything like a lymphatic constitution. His development has been been perfectly normal, his general health excellent. The other patients are all in excellent condition also.

17. **Sugars in Infant Feeding.**—From his studies, Leopold has come to the conclusion that a combination of about equal parts of maltose and dextrin was the sugar preparation that was borne best in the artificial feeding of infants. He found that the maltose-dextrin preparation caused dyspeptic stools and rise in the temperature much less frequently than either lactose, saccharose, glucose or maltose. It was also shown that a gain in weight was obtained in a greater number of cases by maltose-dextrin preparations than by any of the other sugars. Leopold's experiments were made on young infants, mostly under 3 months of age, because of their well-known susceptibility to digestive disturbances.

American Journal of Urology, New York

September, VII, No. 9, pp. 327-366

19 Armamentarium of Cystoscopist, with Special Reference to Use and Construction of Certain Types of Cystoscopes. L. Buerger, New York.

Long Island Medical Journal, Rockville Centre, N. Y.

September, V, No. 9, pp. 339-381

20 Treatment of Adenoids and Diseases of the Tonsils. W. W. Carter, New York.
21 Some Elementary Principles of Dieting. F. Overton, Patchogue, N. Y.
22 Organ of Mastication; the Teeth. H. C. Ferris, New York.
23 *Cause and Relief of Pain in Duodenal Ulcer. J. T. Pilcher, Brooklyn.
24 Surgical Indications of Duodenal Ulcer. P. M. Pilcher, Brooklyn.

23. Abstracted in THE JOURNAL, June 10, 1911, p. 1751.

Journal of Nervous and Mental Disease, Lancaster, Pa.

October, 38, No. 10, pp. 577-640

25 *Deviation of Tongue in Hemiplegia. E. Jones, Toronto.
26 *Osteo-Arthritis of Spine as Cause of Compression of Spinal Cord and Its Roots. P. Bailey and L. Casamajor, New York.

25. Abstracted in THE JOURNAL, July 29, 1911, p. 417.

26. **Arthritis of Spine.**—In a case of spinal arthritis with typical history seen by Bailey and Casamajor, the Röntgen ray demonstrated exostoses and ankyloses in the spinal joints and other joints, but the case presented the unusual feature of a localized paralysis corresponding to the lesion

demonstrated in the spine. In a previous case the diagnosis of extramedullary tumor had been made, but the operation showed nothing but a bony thickening of the laminæ. These two cases led the authors to an inquiry as to the circumstances under which the spinal contents may be pressed on by exostoses in a way to cause some or all of the symptoms of paraplegia. Of the five cases recorded by them all presented symptoms of compression. Some degree of spinal osteo-arthritis is extremely common in persons past middle age, and the condition itself is probably a part of the degeneration of senility. When present in slight degree, it may cause few or no symptoms, or its symptoms, when vague, may be and doubtless often are disregarded by physicians or dismissed by them as rheumatic or neurasthenic. Unmistakable local pain and rigidity are probably constant, when the lesion is extensive enough to cause focal symptoms. But in addition to the local symptoms of bone disease there is no longer doubt that spinal osteo-arthritis may cause focal symptoms in the nervous system generally referable to compression of one or more nerves, sometimes of the cord or cauda equina. A study of the subject has convinced the authors that the use of the Röntgen ray in spinal diseases can hardly be too widely extended. Osteo-arthritis is a very common disease, and in slight degrees cannot be recognized, except by means of the Röntgen ray. Many spinal symptoms classed as rheumatic and "nervous" are probably due to it; and they think it probable that some of the cases of traumatic lumbago, so frequent after injuries to the back, depend for their symptomatology on osseous hyperplasia of the spine. In such cases and as a preliminary to every spinal operation, a Röntgen-ray examination should become a matter of routine. Therapy in osteo-arthritis is discouraging. Some local measures are counter-irritation, immobilization and relief of pressure. Counter-irritation may be in the form of deep massage of the spine and the actual cautery; hot-air baths have been of little use in the authors' hands. Immobilization, by means of plaster-jacket, seems particularly useful in subacute cases, or when there is marked deformity. The operative indications are too infrequent to permit any general rules, except that operations for the relief of pressure on the cord in this disease is not contra-indicated and may result in great benefit.

Journal of South Carolina Medical Association, Chaleston

October, VII, No. 10, pp. 359-397

27 *Plastic Operations on Face. J. S. Horsley, Richmond, Va.
28 Psychic Measures in Medicine. T. A. Williams, Washington, D. C.

27. Published in full in THE JOURNAL, Aug. 26, 1911, p. 697.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

October, XIV, No. 10; pp. 578-640

29 *Bromatotherapy. H. W. Wiley, Washington, D. C.
30 Rules and Management of Labor and of Puerperium. R. H. Turner, Paris, France.
31 *Salvarsan as Patented Product. F. E. Stewart, Germantown, Pa.
32 Classification of Nervous and Mental Diseases. B. Sidis, Portsmouth, N. H.
33 Treatment of Leukemia with Mixed Toxins of Coley. R. C. Larrabee, Boston.

29 and 31. Abstracted in THE JOURNAL, June 3, 1911, p. 1676.

American Journal of Diseases of Children, Chicago

November, 2, No. 5, pp. 293-368

34 *Mikulicz' Disease, with Report of Case of Lymphatic Leukemia in Child with Marked Enlargement of Salivary Glands. W. Tileston, New Haven, Conn.
35 *Caloric Needs of Premature Infants. J. H. Hess, Chicago.
36 *Use of Malt Sugar and High Percentages of Casein in Infant Feeding. J. L. Morse, Boston.
37 *Bacteriologic Examination of Lymph-Nodes in Scarlet Fever. J. A. Kolmer, Philadelphia.
38 *Intestinal Infantilism of Herter. R. G. Freeman, New York.
39 Congenital Myatonia; Report of Case with Autopsy. W. T. Councilman and C. H. Dunn, Boston.

34. **Mikulicz' Disease.**—Tileston's case was one of lymphatic leukemia of the "aleukemic" type, in a child 2 years old with large tumors of both parotids and both submaxillary glands; lacrimal glands not involved. Blood: August 30, red cells, 6,860,000; hemoglobin, 95 per cent.; leukocytes, 14,700. September 14, leukocytes, 6,700. The histologic picture was so typical that the diagnosis of lymphatic leukemia was made without hesitation. Tileston says that there can be little question that this case should be classified as lypmhatic leukemia of the "aleukemic" or "preleukemic" type; that is to say, without increase in the leukocyte count. The histologic appearance of the salivary glands, however, is identical with that described in many cases of Mikulicz' disease without involvement of the blood or lymphatic system, so that the case also fits in with the Mikulicz syndrome. The absence of enlargement of the lacrimal glands does not preclude such a classification, for although in the typical cases of Mikulicz' disease the lacrimals are involved, a number of instances have been reported in which they were not. Therefore, Tileston believes that the term Mikulicz' disease should be reserved for those cases of chronic, painless bilateral enlargement of the salivary and lacrimal glands in which pseudoleukemia and leukemia can be excluded. The cases occurring in the last-named diseases should be classified as pseudoleukemia or leukemia with the Mikulicz syndrome. The cause of Mikulicz' disease is probably some infectious agent in the widest sense of the word. It is likely that a number of different organisms may cause the symptoms of the disease.

35. **Caloric Needs of Premature Infants.**—In a study of six infants with a birth-weight averaging between 1,000 and 1,500 gm., Hess found four infants with energy quotients fluctuating between 115 and 170, averaging daily gains between 14 and 27 gm., while those with wider fluctuation gained on an average 12 to 14 gm. daily. Infants with birth-weights between 1,500 and 2,000 gm. showed the best results when being fed between 102 and 132. The largest infant with a birth-weight of 2,010 gm. gained on 94.5 to 118.5 apparently with equal rapidity, while one infant showed marked fluctuations when an energy quotient was passed. Hess believes it is safe to state that the figures of Budin and others, of an energy quotient of 100 set for the full-term new-born infant does not hold for the premature and under-weight infant, but he would say that the energy quotient needed varies inversely with the age and birth-weight, the energy quotient averaging between 115 and 170 in those below 1,500 gm. and 100 and 132 in those over 1,500 gm. At first the caloric value of the food should be low, but the quantity of each feeding should also be small. These infants, therefore, should be fed small quantities, frequently repeated, i. e., every one and one-half to two hours during the day and two to three hours during the night, according to the development of the individual, with special reference to the digestive organs, stools, urine and presence or absence of vomiting. On the first day following the first bowel evacuation the human milk may be fed diluted with one or two parts of water or sugar, with a caloric value approximating 30. From the second day on, in the absence of indigestion, the food may be increased by 10 calories daily. In the presence of digestive disorders greater care is necessary and it may be necessary for some days to hold the feeding in the neighborhood of 90, approximately the amount necessary to maintain the metabolic equilibrium. After ten to fifteen days an attempt should be made to hold the figures, in the infant weighing less than 1,500 gm., to 120 to 140, and in those weighing over 1,500 gm. at between 110 and 130; but in all cases the infant itself should never be lost sight of, and more especially the stools and weight. One other important factor is a sufficient water-supply to counterbalance the rapid evaporation due to artificially heated and dried air and the excessive excreta of the first few days. All intestinal disturbances in premature infants should be treated as if they were atrophic infants, as they do not stand starvation well. Artificial feeding of these infants should be discouraged in all cases in which the infant is born at thirty-six weeks or under. Artificially fed, full-term infants also require a higher food-value than the same infants at the breast, the average added requirement being 10 to 20 calories per kilo, which would also hold true in premature infants, and this adds materially to the dangers of this method of feeding. The energy quotient needed in Hess' series of seventeen cases to maintain the metabolic equilibrium ranged quite

close to 90, while in the full-term infant 70 is usually sufficient. The method of administration of food in each case varied with the vitality of the infant.

36. Abstracted in The Journal, July 8, 1911, p. 153.

37. **Bacteriologic Examination of Lymphatic Glands in Scarlet Fever.**—In a study of the glands of twenty-six patients with scarlet fever, including a case cultured at autopsy, Kolmer did not find any organism, in any case, in any way resembling the bacillus described by Vipond. (See The Journal, Aug. 12, 1911, p. 588.)

38. **Intestinal Infantilism of Herter.**—The intestinal infantilism of Herter is not a very infrequent condition in young children, who for a considerable period will not grow or gain in weight, although the hygienic surroundings, feedings and supervision are most carefully managed. These children have characteristic symptoms and characteristic, abnormal intestinal flora, as well as equally characteristic changes in the urine. Freeman reports four such cases. He believes that the lack of growth is really due to an intestinal condition that interferes with a proper absorption of food in the bowels, and this interferes with an increase in weight.

Journal of Iowa State Medical Society, Clinton

October 15, I, No. 4, pp. 149-228

40 Pain in Disease of Heart. J. B. Herrick, Chicago.
41 Drug Action. C. Van Epps, Iowa City, Iowa.
42 Etiology and Pathogenesis of Anemia. C. P. Howard, Iowa City, Iowa.
43 Symptomatology of Anemia. F. Albert, Mason City, Iowa.
44 Treatment of Anemia. D. N. Loose, Maquoketa, Iowa.
45 Diverticulitis. L. W. Littig, Davenport, Iowa.
46 Growth of Public Interest in Sanitary Science. C. W. Baker, Stanwood, Iowa.
47 Epidemic of Glandular Fever. G. E. Crawford, Cedar Rapids, Iowa.
48 Contracted Pelvis Followed by Cesarean Section. J. A. Cahill, Volga City, Iowa.

Surgery, Gynecology and Obstetrics, Chicago

November, XIII, No. 5, pp. 485-596

49 Ileocecal Adhesions (Lane's Kink and Jackson's Membrane). F. G. Connell, Oshkosh, Wis.
50 Actinomycosis of Stomach. A. W. Mayo-Robson, London, England.
51 Factors in Present-Day Mortality of Appendicitis. J. M. Wainright, Scranton, Pa.
52 Physiologic Principles in Treatment of Acute Peritonitis. J. L. Yates, Milwaukee, Wis.
53 *Blood-Pressure Index of Eclampsia. H. C. Bailey, New York.
54 Seventy-Three Cases of Dudley's Operation for Dysmenorrhea and Sterility. S. M. Brickner, New York.
55 Acidosis. B. B. Cates, Knoxville, Tenn.
56 Fibroma of Vagina. A. H. Barkley, Lexington, Ky.

53. **Blood-Pressure Index of Eclampsia.**—In 1,136 systolic readings on 145 women made in the Bellevue Hospital, New York, Bailey found that the average blood-pressure is 118 mm. of Hg. These readings were made with the wide-cuff Stanton instrument, and do not include readings taken on the day of labor. These readings vary greatly, but that there is a high limit rarely passed. Many women run a continuously moderate blood-pressure which is little affected by the ordinary occurrences of ward life, but by far the most numerous are those having from day to day an irregular range of blood-pressure. As far as it could be determined, there was no regular variation in the readings from primiparæ and multiparæ. Of these women, 28 per cent. showed a variation of 25 to 30 mm. during the course of some days. A study of the nitrogen partition of the urine of the women who have marked changes from day to day has so far been found to be of little value. Observations through the remainder of the pregnancy in this type of case lead to the conclusion that changes of 30 mm. above the normal average (118) mean very little from a practical standpoint. Excitement, exertion, digestion, rest and sudden changes of position all tend to produce changes up to 10 mm., but seldom more than this amount. The onset of labor tends to raise the blood-pressure. In the first and second stages of labor 140 to 150 mm. may be considered a fair average, if taken between the pains.

Examinations of blood-pressure in early toxemia were invariably low. Apparently toxic substances are circulating in the blood which have marked influence on the vomiting center, but with little action on the vasomotor apparatus, either central or peripheral. In the developed toxemia of the latter months there is usually present a blood-pressure-raising principle or else by hormone action or similar means the pressure is raised to increase the natural resistance of the body. The fact that in the fulminant type of fatal toxemia in the latter months the blood-pressure is very low points more to the latter idea and also tends to more closely associate the early and late manifestations of poisoning that occur in these women. While it is generally known that cases of eclampsia at the time of the convulsions usually have high blood-pressures, still convulsions occur when the pressure is as low as 155. The eclamptic toxemia may be even more severe when the pressure is very low. From the analysis of blood-pressure readings by many observers 150 mm. may be taken as a danger limit, and any pressure above this should demand rigorous investigation and treatment.

Chicago Medical Recorder

October 15, XXXIII, No. 10, pp. 525-586

57 Treatment of Third Stage of Labor or Delivery of Placenta. L. C. Collins.
58 Milk Supply of Chicago. G. M. Whitaker, Chicago.
59 Cerumen (Wax) in Ears. J. C. Warbrick, Chicago.
60 Alcoholism Cured by Surgery. W. F. Waugh, Chicago.

Denver Medical Times and Utah Medical Journal

October, XXXI, No. 4, pp. 125-168

61 Malaria Contracted in Colorado at Altitude of 5,000 Feet Above Sea Level. J. E. Dale, Fort Collins, Colo.
62 Facts Regarding Pneumonia and Tuberculosis. J. M. Shaller, Denver.
63 The Mental Hospital of the Future. H. H. Drysdale, Cleveland.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

October, XIII, No. 4, pp. 209-268

64 *Nosology of So-Called Rheumatic Diseases. B. M. Randolph, Washington, D. C.
65 Influences During Pregnancy on Unborn Child. J. M. Tompkins, Richmond.
66 Ovarian Dermoid with Twisted Pedicle in Girl of Fourteen. H. A. Royster, Raleigh, N. C.
67 Hysteria or Neoplasm. T. A. Williams, Washington, D. C.

64. **Rheumatic Diseases.**—Randolph protests against the perpetuation of the use of the term "rheumatism" as being the source of incalculable error in diagnosis, prognosis and treatment, and calls attention to the fact that our knowledge of the pathology of these conditions is sufficiently developed to permit of a classification on a logical basis.

Vermont Medical Monthly, Burlington

October 15, XVII, No. 10, pp. 235-260

68 *What Standard of Efficiency Should be Required of Physicians in Order to Guarantee Best Medical Service to Public and How Should That Standard be Determined? H. C. Tinkham, Burlington, Vt.
69 Ice Water or Summer Colitis and Treatment of Mucous Colitis. B. Joseph, New York.
70 Three Hundred Confinements. L. W. Burbank, Cabot, Vt.
71 Röntgen Ray in Medicine and Surgery. W. J. Tindall, Montpelier, Vt.

68. **Standard of Efficiency, Required of Physicians.**—Tinkham says it would be a decided step in advance if there was an organization of state boards which required some standard of efficiency as a prerequisite to membership and which could have some influence in bringing about a more uniform standard of examination. It is difficult to see how the influence of state examining and licensing boards is to produce an elevating influence on medical education until they are composed of men who are as well qualified to examine medical graduates as the men who compose medical faculties are qualified to teach, and it is difficult to see how state boards can determine and maintain a satisfactory standard of efficiency for medical graduates unless these boards are composed of efficient men.

Canadian Medical Association Journal, Toronto

October, I, No. 10, pp. 919-1018

72 *Transient Attacks of Aphasia and Paralyses in States of High Blood-Pressure and Arteriosclerosis. Sir W. Osler, Oxford.
73 Non-Operative Treatment of Appendicitis. R. D. Rudolf, Toronto.
74 Peritoneal Effusion (Ascites) in Typhoid. Physical Signs of Exudate in Peritoneal Cavity. A. McPhedran, Toronto.
75 Prolonged Pregnancy. A. H. Wright, Toronto.
76 Diagnosis of Syphilis by Binding of Complement Method. F. B. Gurd, Montreal.
77 Chorionepithelioma. H. N. Vineberg, New York.

72. **Transient Attacks of Aphasia and Paralyses.**—Osler cites the case of a well-built, active man of 43, who had used alcohol and tobacco in excess, and suddenly found that he could not speak or write. In a few hours he could say a few words, but incoherently. The next day he could talk, but not quite freely. There was no paralysis, no disturbance of vision and no headache. Within three or four days he was quite well and could talk perfectly. The blood-pressure was found to be 212 mm., and the attack was regarded as possibly a slight hemorrhage. Fifteen months after the attack he was very well, except that he had become very nervous and apprehensive. His arteries, with the blood-current flowing, could easily be rolled under the fingers. His heart appeared to be normal. The blood-pressure was 220 mm. in spite of the fact that he had been taking for more than a year nitrites and potassium iodid. He has had no other cerebral attack.

Another man, aged 62, had worked hard, but had not been a heavy drinker. He had used tobacco to excess. One afternoon he went out to say something to the gardener and to his surprise found it impossible. He did not feel giddy or dazed, and five minutes later he could speak quite well. He returned to the house, and about an hour afterward some people came in, and to his surprise he could not say how-do-you-do, could only nod and give a grimace. He had no headache and felt quite clear in his mind. In the course of ten to fifteen minutes he began to say a few words, though not quite clearly; in a day or two he could say everything. He remained in bed for a couple of days on low diet. His blood-pressure was 200 mm., and for the first time it was found that his arteries were sclerosed. There was an extreme degree of arteriosclerosis. Brachials, radials and ulnars were visible in their entire course, with forcible pulsation.

Osler divides these cases into three categories: (a) Healthy individuals with high blood-pressure, but without signs of arterial disease; (b) patients with well-marked arteriosclerosis, in whom the cerebral attacks have come on without warning, sometimes as the signal symptom, and a majority of Osler's cases come in this group; (c) in advanced sclerosis with cerebral changes, manifested by progressive mental and muscular weakness, all possible types of these transient seizures, including convulsions, may occur. The attacks are most frequent in the aged, but men in the fifth and sixth decades are also affected.

California State Journal of Medicine, San Francisco

October, IX, No. 10, pp. 401-446

78 Abnormal Body Temperatures in Injuries of Cervical Spinal Cord. R. L. Wilbur, San Francisco.

79 Treatment of Vascular Nevus by Use of Carbon Dioxid Snow. D. Friedlander, San Francisco.

80 Mistakes in Medical Education. D. Tait, San Francisco.

81 Some Points to be Considered in Feeding Infants. L. Porter, San Francisco.

82 Case of Carcinoma of Appendix. H. A. L. Ryfkogel, San Francisco.

83 Tentative Classification of Exceptional Children. M. P. E. Groszmann, Plainfield, N. J.

Ohio State Medical Journal, Columbus

October 15, VII, No. 10, pp. 469-514

84 *Mucous Colitis. C. C. Fihe, Cincinnati.

85 Vaccine Therapy from Standpoint of General Practitioner. L. M. Ladd, Cleveland.

86 *Results Obtained from Use of Coley's Toxins in Treatment of Sarcoma. J. C. Oliver, Cincinnati.

87 Conservation of Humanity. O. O. Fordyce, Athens, Ohio.

88 Precautions to be Taken in Prevention of Pneumonia. G. E. Robbins, Chillicothe.

89 Recurring Corneal Erosions. J. S. Wyler, Cincinnati.

84. **Mucous Colitis.**—Fife calls attention to a röntgenologic study of mucous colitis which showed malpositions and angulations of the colon which were coincident with more or less characteristic attacks of the disease. In some of these typical attacks occurred of what Van Noorden would choose to call colica mucosa.

86. **Coley's Toxins in Sarcoma.**—Oliver cites ten cases in which he used the toxin, but he had such poor results that he discourages further use. He says comparatively few persons are cured by its administration, the vast majority, at least 90 per cent. of the cases are uninfluenced by its use. He says one is not justified in assuming that this treatment will ever influence any large proportion of the cases of sarcoma favorably.

Ophthalmology, Seattle, Wash.

October, VIII, No. 1, pp. 1-141

90 Epithelioma of Eye at Sclero-Corneal Limbus. M. Danis, Brussels.

91 Removal of Piece of Steel from Apex of Orbit. C. A. Wood, Chicago.

92 Parinaud's Conjunctivitis; Report of Two Cases. R. M. Lapsley, Keokuk, Iowa.

93 Partial Tenotomy of Eye Muscles. R. P. O'Connor, U. S. Army.

94 Mydriatic Ozena. L. R. Culbertson, Zanesville, Ohio.

95 Mental Disturbances Following Operations and Accidents to Eyes and Responsibility of Physician as Regards Prognosis in Serious Cases. H. V. Würdemann, Seattle, Wash.

96 Present State of Question as to Trachoma Corpuscles. R. Greeff, Berlin.

97 Magnet Operation on Eye. O. Haab, Zürich.

98 Experimental Production of Congenital Cataracts and Malformations in Eyes of Vertebrates. H. E. Pagenstecher, Strassburg.

99 Special Forms of Atrophy of Iris. T. Axenfeld, Frieburg, Germany.

Medical Record, New York

November 4, 80, No. 19, pp. 909-958

100 Surgery of Common Bile Duct. J. B. Deaver, Philadelphia.

101 Primary Splenohepatomegaly in Brother and Sister. H. B. Sheffield, New York.

102 Healed Tuberculous Lesion from Life Insurance Standpoint. G. Parker, Peoria, Ill.

103 Role and Methods of Psychotherapy in Care of Psychasthenia Predisposing to Inebriety. T. A. Williams, Washigton, D. C.

104 Recognition and Treatment of Gonorrheal Cervicitis and Endometritis. W. T. Dannreuther, New York.

105 *Use of Ipecac to Abort Typhoid Fever. W. L. Frazier, Mountain Home, Ida.

106 Transillumination in Locating Foreign Bodies in Extremities. M. H. Kahn, New York.

105. **Ipecac to Abort Typhoid.**—Frazier used ipecac in six cases of typhoid with good results. For instance: Woman 44 years of age. She was seen first on the third day after becoming confined to her bed; the case was diagnosed as typhoid on the sixth day of her illness, Widal test being positive. At 8 p. m. of the sixth day she was given 15 minims of tincture of opium; thirty minutes later she was given 30 gr. of pulverized ipecac in salol-coated capsules; the room was made dark and she was required to lie on her right side for two hours, so that the capsules might pass out of the stomach as quickly as possible. In this way vomiting was prevented by getting the ipecac past the stomach without coming in contact with the stomach wall. On the seventh, eighth and ninth days ipecac was given in the same manner, the dose being decreased 5 gr. each day; on the ninth day the dose being 10 gr. On the tenth, eleventh and twelfth days the dose was 10 gr each day. The highest temperature recorded was 103.8 F. on the seventh day. The highest recorded on the eighth day was 99.6 F. There was no elevation of temperature after the ninth day. The ninth day of her illness was the fourth day she was given ipecac. The remaining cases were treated similarly. Frazier says it is necessary that each fecal discharge be carefully examined to find whether or not any of the capsules pass without being dissolved.

Annals of Ophthalmology, St. Louis

October, XX, No. 4, pp. 711-856

107 Mechanics of Choked Disk. M. Standish, Boston.

108 Relation of Choked Disk to Intraocular Tension; Clinical Study of Six Cases. W. R. Parker, Detroit.

109 Lead Amblyopia and Presentation of Case of Left Homonymous Lateral Hemianopsia Due to Lead Poisoning. C. Williams, Philadelphia.

110 Probable Cyst of Retina. G. S. Derby, Boston.

111 Case of Syphilitic Tarsitis Treated by Salvarsan. A. C. Sautter, Philadelphia.

112 Episcleritis Periodica Fugax. A. C. Snell, New York.

113 Three Cases of Xerosis Epithelialis with Involvement of Muscular Anomaly. H. W. Wootton, New York.

Ophthalmic Record, Chicago

October, XX, No. 10, pp. 599-648

114 Histopathology of Diplo-Bacillary Conjunctivitis. H. McKee, Montreal.

115 Case of Amblyopia Due to Ingestion of 120 Grains of Quinin Sulphate. G. F. Keiper, Lafayette, Ind.

116 Two Cases of Embolism with Retention of Central Vision. A. C. Snell, Rochester, N. Y.

117 New Operation for Pterygium. D. W. White, Pawnee, Okla.

118 Three Cases of Xerosis Epithelialis with Involvement of Cornea. H. V. Dutrow, Ancon, Canal Zone.

119 Blood Condition in Sympathetic Ophthalmia. H. S. Gradle, Chicago.

St. Louis Medical Review

October, V, No. 10, pp. 289-320

120 Vaccine Therapy in General Practice. G. H. Sherman, Detroit.
121 Experimental Investigations and Pathologic Researches. Cause of Cancer. F. Gaertner, Pittsburgh.
122 Some Interesting Cases of Pneumonia. A. E. Campbell, Clinton, Ill.
123 Treatment of Infections of Hands and Fingers, with Special Reference to Tenosynovitis. S. W. Moorhead, Philadelphia.
124 Specific Gravity of Urine in Relation to Diet and Chlorids. J. C. Warbrick, Chicago.
125 Man as Geologic Species in Western Hemisphere. A. S. Ashmead, New York.

Therapeutic Gazette, Detroit

October 15, XXXV, No. 10, pp. 685-760

126 The B. C. Hirst Bag for Hydrostatic Dilatation of Cervix. R. L. John, Philadeplhia.
127 Action of Animal Extracts on Secretion of Mammary Gland. I. Ott and J. C. Scott, Philadelphia.
128 Adenoids: Indications for Their Removal, Operation of Adenectomy and Liability of Recurrence. W. H. Tomlinson, Philadelphia.
129 Dyspepsia of Heart Disease and Its Dietetic Treatment. A. W. Calloway, Asheville, N. C.

Medical Herald, St. Joseph, Mo.

October, XXX, No. 10, pp. 431-472

130 Three Cases of Acute Poliomyelitis in Same Family at Same Time. A. L. Skoog, Kansas City.
131 Should Venereal Infections Be Classed and Reported as Contagious Diseases? T. M. Paul, St. Joseph, Mo.
132 Case of Extreme Edema of Cecum Following Gangrenous Appendicitis. L. J. Dandurant, St. Joseph, Mo.
133 Tonsils as Source of Infection, Tonsillitis and Peritonsillar Abscess; Its Prevention. C. F. Bartholomew, Broken Bow, Neb.
134 Alcoholic Degenerations. T. D. Crothers, Hartford, Conn.
135 Penetrating Wounds of Eyeball. P. I. Leonard, St. Joseph, Mo.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

October 21, CLXXXI, No. 4599, pp. 1117-1178

1 *Old and New Views on Treatment of Tuberculosis. C. T. Williams.
2 *Results of the Manipulative Treatment of Congenital Dislocation of Hip-Joint. G. C. E. Simpson.
3 *Case of Axial Rotation of Fibroid in Which Uterus Was Involved in Twist. J. Bland-Sutton.
4 *Acute Rheumatism Among Children. F. Langmead.
5 *Acute Endocarditis Caused by Microorganism Hitherto Undescribed. A. T. Nankivell.
6 Spinal Anesthesia in Egypt. H. E. S. Stiven.
7 Acute Glaucoma Successfully Treated by Operation of Trephining the Sclera. S. Stephenson.
8 Case of Intrauterine Hemorrhage with Nervous Origin. D. Fenton.

1. **Treatment of Tuberculosis.**—Williams is convinced that any comprehensive scheme for dealing with tuberculosis in Great Britain should include the establishment of a large number of tuberculosis hospitals scattered over the country in close connection with dispensaries and sanatoriums and as a further link in the chain some form of labor colonies and exchanges should be available. He says that the task of further reducing and abolishing tuberculosis is not a hopeless one, but it does not lie wholly with the physicians. It lies also with those who have it in their power to remove or lessen the principal causes of tuberculosis, viz., the overcrowding of our cities, the want of open spaces and ventilation, the insanitary houses, the lack of a good supply of water and of pure milk. If all these defects were remedied the number of phthisis cases would be comparatively small. The government and the local authorities could insist, too, on the removal of advanced cases of tuberculosis to a hospital or infirmary, and thus do away with one chief source of infection, and we should soon see a rapid fall in the number of contact cases and in the mortality tables.

2. **Congenital Dislocation of Hip-Joint.**—Congenital dislocation of the hip is a condition which progressively gets worse till puberty and may cause severe deformity. In adult life further trouble may arise and completely incapacitate the patient. Simpson has found that treatment by manipulation at the earliest possible time after infancy may be expected to yield a stable articulation with perfect function in 60 to 70 per cent. of the cases. A slight limp (due to imperfect growth of the bones) and some slight limitation of movement may remain, but the children are cured of any obvious deformity or incapacity. Of the remaining 35 to 40 per cent. the condition is usually much improved by treatment. The treatment in children below 8 years of age is attended by little or no danger and by few unfavorable accidents. The trouble caused to the parents is slight and the loss of school attendance in early childhood is of but small importance. In children between 9 and 12 years of age treatment by manipulation has greater dangers and inconveniences and gives much less favorable results. It should, however, be tried in all cases which have unfortunately reached this age with the condition unremedied; great care and gradual reduction avoid the dangers of shock and laceration and considerable improvement is usually effected. In unsuccessful and relapsed cases some form of open operation may prove of advantage.

3. **Axial Rotation of Fibroid.**—A spinster, aged 67, sought Bland-Sutton's advice on account of pain, discomfort and frequency of micturition, associated with a large tumor which could be felt in the hypogastric region. It had the clinical features of a uterine fibroid. When exposed in the course of the operation performed for its removal, the tumor proved to be as big as the head of a new-born child. On withdrawing the tumor the pedicle was found to be twisted like a rope; on untwisting it the ovaries, Fallopian tubes and uterus were recognized. Subtotal hysterectomy was performed.

4. **Acute Rheumatism Among Children.**—Altogether 2,556 children were examined by Langmead. Of these, 844 were boys and 838 girls in the senior departments, i. e., from 6¼ to 14 years old; and 874 were attending the infants' department, and consisted of nearly equal numbers of boys and girls from 3 to 6½ years old. Fifty-nine boys and 74 girls could be classified as definitely rheumatic, a total of 133. This is equivalent to a percentage incidence of 5.20 for children of all ages attending school, or of 6.83 for children in the senior departments only, those attending the infants' department being excluded from the estimation. In the majority of cases attention was drawn to the rheumatic child by the condition of the heart, sometimes by definite valvular disease, at others by dilatation accompanied by such alteration in sounds and rhythm as one is accustomed to hear in rheumatic children. More and more children become rheumatic as they grow older. There is, however, an apparent accession of rheumatism at the age of 10 which is not shown in subsequent years. Langmead gives no explanation for this and regards it as an inaccuracy which would have disappeared if a large enough number of children had been examined.

Out of these 133 children all except 18 showed some evidence of cardiac disorder at the time of examination. This rheumatic heart affection occurred in 4.49 per cent. of the children of all ages attending school, or in 5.94 per cent. of those in the senior departments only. Obvious valvular disease was found in 2.93 per cent. of children at all ages, or 3.92 per cent. of those in the senior departments. Mitral regurgitation was noted 44 times; mitral stenosis 15 times; double mitral disease, 9 times; aortic regurgitation and mitral stenosis only once; dilatation with a systolic bruit at the apex, possibly mitral regurgitation, 12 times; dilatation with a short presystolic rumble, or so-called reduplicated second sound (mid-diastolic bruit), possibly early mitral stenosis, 8 times; dilatation without bruits, 20 times. The comparative rarity of aortic regurgitation in children is emphasized by the fact that only one case was discovered among the 2,556 children examined. Chorea did not appear among the children or in the histories of their previous illnesses as often as might have been expected. There were eighteen cases only, which amounted to 0.70 per cent. of all the children of all school ages or 1.06 per cent. of the children in the senior departments. The comparative incidence in boys and girls followed the usual rule, there being twice as many girls affected as boys. Thus 0.71 per cent. of the boys were at some time choreic and 1.43 per cent. of the girls. The relation of enlarged tonsils and adenoid vegetations to rheumatism in childhood is well illustrated by the figures obtained. Taking the 133 rheumatic cases, in 75 there were no signs of abnormality in the throat, in 21 the tonsils were slightly enlarged, in 11 considerably enlarged, in 16 greatly enlarged and in 3 tonsillotomy had been performed before the patients were examined. Adenoids were responsible for *producing* signs of post-nasal obstruction and mouth-breathing in 7. In other words, there was an abnormality of the tonsils or pharyngeal mucosa or both in 58 cases, or in 43.6 per cent. of the rheumatic cases. This was sufficient to warrant operative interference in 37 cases, or 27.8 per cent. of the rheumatic cases.

5. **Acute Endocarditis.**—The diplococcus which Nankivell obtained from the patient's blood-stream showed no evidence of having a capsule. In *shape* each *coccus* was *round*, the diameter being about 0.7. There was no tendency to chain formation, either in broth or on solid media. The organism showed no evidence of a hilum. It was non-motile. It had neither spores nor flagella. Its thermal death-point was 48 C. This diplococcus *does not retain the stain by Gram's method*, it is Gram-negative. It stains well with dilute carbol-fuchsin and eosin, less brilliantly with the blue dyes. It is not acid-fast. On nutrient agar the diplococcus grows well at 37 C. and fairly well at 20 to 22 C. At 42 C. on agar the growth is *only slight. The growth on agar has a ground-glass appearance*, with small translucent separate colonies at the edges of the streak. The organism does not readily die and will survive on agar for at least twelve weeks without subculturing. The diplococcus will grow both anaerobically and aerobically. *It liquefies gelatin. It grows well in broth and peptone* water, forming a precipitate; in peptone water it produces indol at the end of a week's growth. On Conradi-Drigalski medium and on Rebipelagar the diplococcus grows feebly, forming white, pin-point, translucent colonies. Litmus *milk is clotted and turned acid by the diplococcus in forty-eight* hours; the clot is firm and not honeycombed, and the supernatant whey is clear. The organism ferments glucose, with the production of acid, but no gas. Lactose, sucrose, maltose, galactose, raffinose, arabinose, mannite, dulcite, inulin, *salicin and dextrin are not affected. The diplococcus is not* hemolytic. The acidity and alkalinity of the culture media do not influence greatly the growth of this microorganism. It grows well on agar between 45 and 60 (Eyre's scale). Outside these extremes the growth is more feeble. The organism *is inhibited by 1 in 40,000 malachite green.* This diplococcus does not seem to be very pathogenic. The little girl from whose blood it was obtained was at no time very ill, nor did it produce any ill-effects when injected into guinea-pigs.

British Medical Journal, London

October 21, No. 2651, pp. 961-1052

9 *Old and New Views on Treatment of Tuberculosis. C. T. Williams.
10 Auricular Fibrillation. J. Mackenzie.
11 *Infusion Anesthesia: Use of Normal Saline Infusion as Means of Administering Ether. F. Rood.
12 Symphyseal Ligament of Parturient Guinea-Pig. J. Bland-Sutton.
13 Resuscitation of Still-Born. Sir F. Champneys.
14 Eclampsia Complicating Labor in Girl Aged 12: Recovery of Mother and Child. C. H. Roberts.
15 Present Position of Vaginal Operations in Relation to Uterus and Adnexa. P. Strassmann.
16 Cause and Cure of Eclampsia. H. Tweedy.
17 Dangers of Fibromyomata of Uterus in Later Years of Life. J. N. Stark.
18 Dysmenorrhea Due to Very Small Fibroids. T. Wilson.
19 Case of Tuberculous Elephantiasis of Vulva. C. E. Purslow.
20 Diagnosis and Treatment of Conditions in Accessory Nasal Sinuses Giving Rise to Oculo-Orbital Symptoms. A. Onodi.
21 Submucous Resection of Nasal Septum. D. McKenzie.
22 Treatment of Tuberculosis of Larynx. D. Grant and P. Watson-Williams.

9. See Abstract 1.

11. **Infusion Anesthesia.**—The most striking features of infusion anesthesia, Rood says, are: Extreme flexibility so that the condition of the patient can be adjusted with great nicety and can be changed in the direction of deepening or lightening of anesthesia with really remarkable rapidity. That the patient begins to come round very soon after the anesthetic is stopped and is able to converse rationally within a few minutes. That postanesthetic vomiting and pulmonary irritation are both extremely rare. Rood has used it with much satisfaction in twenty-one cases.

Clinical Journal, London

October 4, XXXVIII, No. 26, pp. 401-416

23 Clinical Effects of Extravasations of Blood. C. B. Lockwood.
24 Asthma. F. J. Wethered.
25 Medical Hydrology in Relation to Treatment of Nervous Disorders. R. F. Fox.

October 11, XXXIX, No. 1, pp. 1-16

26 Arthritis Deformans. A. H. Tubby.
27 Tubercle Bacillus and Infection in Pulmonary Tuberculosis C. Wall.
28 Clinical Aspects of Vertigo. C. E. West.

October 18, XXXIX, No. 2, pp. 17-32

29 Nervous Affections of Traumatic Origin. Sir D. Ferrier.
30 Arthritis Deformans. A. H. Tubby.
31 Some Aids to Diagnosis of Pulmonary Tuberculosis. C. Wall

Dublin Journal of Medical Science

October, No. 478, pp. 242-328

31 Vital Statistics of Ireland Since 1864. Sir W. J. Thompson

Journal of Tropical Medicine and Hygiene London

October 16, XIV, No. 20, pp. 301-316

33 Third Report on Experimental Work on Animal Trypanosomiasis. H. A. Foy.
34 *Salvarsan. J. C. Graham.

34. **Salvarsan.**—A man who was suffering from an obstinate pharyngeal ulcer, had been under treatment with ¾ c.c. of a 1 per cent. solution intragluteal injection of bichlorid of mercury daily for ten days. He then had a course of potassium iodid for two weeks. To accelerate his recovery, Graham decided to inject 0.4 gm. salvarsan intravenously. After the usual initial rise the man's temperature returned to normal *on the following morning*, but he complained of general malaise and pain in his loins and epigastrium. All treatment failed to alleviate this and he required morphin injections to get even a little sleep at night. By way of nourishment he could only stand a little milk; symptoms of paraplegia supervened and gradually became worse. He became unconscious on the morning of the fifth day after the injections with fixed pupils and tonic spasms. Post mortem there were extensive extravasations varying in size from a millet seed to a split pea and even larger all over the serous lining of the chest and pericardium and on the heart itself. The blood itself was also more diffluent than usual. Heart, kidneys, liver and spleen were all in a more or less pulpy condition; the spleen was enlarged and contained a small abscess in its lower segment. Taking the condition of the patient at the *time of the injection* when he was *clinically comparatively* well, with the exception of his pharyngeal ulcer, Graham thinks it quite impossible for the death on the fifth day after injection to be ascribed to any other cause than the salvarsan. Under these circumstances in spite of the occasional brilliant results achieved with salvarsan, he says that patients ought to be warned that a certain number of cases end fatally, death being directly due to its use, so that they may know what risks they incur.

British Journal of Children's Diseases, London

October, VIII, No. 94, pp. 433-480

35 *Blood-Pressure in Diphtheria. J. D. Rolleston.
36 Dull and Backward Children. A. F. Tredgold.
37 A Complex Tumor (Nævoid) of the Fronto-Nasal Region. D M. Greig.

35. **Blood-Pressure in Diphtheria.**—In a series of 179 cases of diphtheria examined by Rolleston the blood-pressure was found to be subnormal in sixty-three patients, or 35.1 per cent., the extent and duration of the depression having as a rule, a direct relation to the severity of the faucial attack. In the great majority the highest readings were found in the first and the lowest in the second week of disease. The normal tension was usually reestablished by the seventh week. In a large proportion of convalescent cases either the readings in the recumbent and erect positions were the same, or the recumbent was higher than the vertical record until the convalescence was firmly established. In laryngeal cases disproportionately high readings were obtained, especially when the dyspnea was sufficiently severe to require operation. Relief of the obstruction by tracheotomy was followed by an immediate and steep fall of blood-pressure (20 to 40 mm.). The blood-pressure showed little tendency to be affected by the early serum phenomena, but during the late febrile syndrome it was raised in 40 per cent. Albuminuria was accom-

panied either by a fall or by no change in the blood-pressure except in a case of uremia, in which there was hypertension. In early paralysis the blood-pressure tended to fall. In late paralysis, even when extensive, it was usually not affected. Rolleston concludes that sphygmomanometry in diphtheria, as in other acute diseases, though of considerable theoretical interest, has little practical significance.

Glasgow Medical Journal

October, LXXVI, No. 4, pp. 241-319

38 Ulcerating Gummatous Syphilide Treated by Salvarsan in a Congenital Syphilitic. G. H. Edington and C. H. Browning.
39 *Diphtheritic Paralysis. A. Love.
40 Public Health Administration in Glasgow. H. A. M'Lean.

39. **Diphtheritic Paralysis.**—Of 1,313 patients seen by Love, 85, or about 6 per cent., became paralyzed. Of these 85 patients, 65, or 77 per cent., recovered and 20 to 23 per cent. died. In no one case could death be attributed solely or directly to paralysis, although in all cases it was contributory. In 10 of the cases that terminated fatally the disease was of the malignant type, while in the others it was of a severe character. Eight had nasal implication, 7 a combination of faucial and laryngeal diphtheria with tracheotomy in three instances, and 27 had greatly enlarged cervical glands. Of the latter, 2 went on to suppuration. Of the 85 patients, 53, or almost two-thirds had paralysis of the palate alone; 15 of the eyes and palate; 3 of the eyes alone (strabismus). Of the 15 who were afflicted with paralysis of the eyes and palate combined, 3 had paralysis of accommodation as well as strabismus. Paralysis of the ocular muscles alone is uncommon, and only 2 of the 68 patients recorded were affected in that way. Of the 12 patients noted as having intercostal and cardiac paralysis, 9 died and 3 recovered, the main symptoms being great difficulty in inspiration with marked feebleness and irregularity of the heart. In the one case in which the lower limbs only were affected the loss of power lasted only for a few days. The average duration of the paralysis was eighteen days. The urine varied greatly as regards albumin. Of the 85 patients, 27 had a large quantity of albumin in the urine, 18 had a moderate quantity, 17 a mere trace and 23 no albumin in the urine at all. With one exception there was a large quantity of albumin in the urine of all the fatal cases. In connection with the administration of antitoxin, it is interesting to note that out of the 85 patients dealt with, 38 were afflicted with serum rashes. In 28 cases the rash was urticarial in character and general in distribution, in 6 it was scarlatiniform and in 4 morbilliform. Two of the rashes, which on their first appearance were urticarial, became morbilliform in about twenty-four hours, while one, which was in the first instance scarlatiniform, became morbilliform in the same time. The serum rash when urticarial in character appeared usually on the ninth day after the administration of serum and lasted on an average 4.2 days. The scarlatiniform rash also appeared on the ninth day, but usually lasted only two days, while the morbilliform rash came out on the twelfth day after the injection of serum and as a rule lasted four days. All-important as is the early administration of antitoxin, it is a mistake to suppose that in the late cases antitoxin is of no avail. Twenty-seven of the patients were admitted after the fifth day and all received antitoxin. Of these, five died, a mortality of 18.5 per cent.

Annales de Médecine et Chirurgie Infantiles, Paris

October 1, XV, No. 19, pp. 593-620

41 *[illegible] ice of Constipation in Children. (Valeur [illegible] constipation chez les enfants.) E.

41. **Constipation in Children.**—Périer and Gaujoux discuss the symptomatic importance of constipation from obstruction, from modification of the contents of the intestines and from defective action of the expelling muscular fibers or nerve plexuses innervating the intestine. Search for the cause along one of these three lines will clear up many puzzling syndromes. Constipation in the mother, especially from lack of out-door exercise, is a frequent factor in the constipation of infants. Congenital stenosis of the rectum may escape discovery for several weeks or months.

Archives Générales de Chirurgie, Paris

September, V, No. 9, pp. 961-1080

42 Intrasaccular Suture in Treatment of Aneurysm—Endoaneurysmorrhaphy. (De l'anévrismorrhaphie.) C. Monod and J. Vanverts. Concluded in No. 10.
43 Cicatricial Changes in Inguinal Canal as Factor in Strangulation of Hernia and Retention of Testicle. (Les cicatrices péritonéales du canal inguinal.) L. Delrez.
44 Operative Treatment of Undescended Testicles. (Technique opératoire de l'ectopie testiculaire inguinale ou iliaque.) R. Le Fort. Commenced in No. 8.
45 Metal Sheath Applied Directly to Fractured Long Bones. (Essais de traitement sanglant des fractures diaphysaires avec des bagues et des plaques amovibles engainantes.) P. Mauclaire.

Archives de Médecine des Enfants, Paris

October, XIV, No. 10, pp. 721-800

46 *Asthma in Children. (L'asthme chez les enfants.) J. Comby.
47 Wedge Excision in Treatment of Rachitic Curvature of the Leg; Two Cases. (Les incurvations rachitiques de la jambe et leur traitement chirurgical.) V. Veau.

46. **Asthma in Children.**—Comby reviews his experiences with seventy-five cases of asthma in children, his impression being that this paroxysmal respiratory neurosis is never due to adenoids or nasal catarrh and is never influenced by operations for the latter, but it may be accompanied by a chronic catarrhal bronchitis or violent and repeated sneezing. The child outgrows the tendency and the lungs do not seem to suffer from it, but the underlying arthritic tendency persists and is liable to manifest itself in other ways. The first attack of the asthma is often puzzling; pneumonia is suspected, but the sudden onset, the normal temperature and the musical character of the râles and their propagation and the transient character of the syndrome all contradict pneumonia. Compression of the air passages by the thymus or enlarged glands and tuberculosis can easily be excluded. Treatment of the attack may be by revulsion, mustard plasters or dry cupping, and by sedatives, opium, belladonna, aconite; morphin will rarely be necessary, but Dover's powder may be given—0.05 gm. per year of the age. The diathesis is best combated by an out-of-door life, rubbing the skin, baths and douches and a vegetable diet. Arsenic, potassium iodid and sulphur may prove useful, especially in the catarrhal forms. Comby generally prescribes them in the form of sodium arsenate, 1, 2 or 3 mg. daily for ten days each month, and then 0.1 gm. of sodium or potassium iodid daily for 10 days.

Bulletin de l'Académie de Médecine, Paris

October 10, LXXV, No. 32, pp. 117-148

48 *Salvarsan in Syphilis. (Sur un cas de mort survenu apres deux injections de 606, chez un sujet relativement sain.) H. Hallopeau and others.
49 *Arteriosclerosis of Heart and Aorta is Often Merely Syphilis. (L'artério-sclérose du cœur et de l'aorte n'est souvent que de la syphilis.) C. Fiessinger.
50 General Spinal Anesthesia. (La rachianesthésie générale par la strychno-stovainisation.) T. Jonnesco.

48. **Fatality After Salvarsan.**—Hallopeau has never used salvarsan but knows of an accident from it, the patient, a robust man of 35, previously addicted to alcohol but having abandoned its abuse for the last two years. He contracted syphilis in 1902 and in recent years has been tormented by a recurring eruption on palms and soles for which he was given two intravenous injections of salvarsan, 0.3 and 0.4 gm. in six days. The third day following the last injection there was some nausea, with vomiting, and the third day convulsions came on, with tremor, the temperature rose to 104 F. and the patient died in coma during the night. The case teaches, Hallopeau thinks, that salvarsan is contraindicated when there is a history of alcoholism. Gaucher in the discussion maintained that salvarsan is a violent poison for the nervous system and stated that he had witnessed several fatalities after its use at the Saint-Louis Hospital, all these patients dying with epileptiform convulsions. Only one of these cases has been published (Ravaud's); the necropsy findings convinced Gaucher that death was the result of arsenical intoxication. He added that salvarsan is given in private practice under conditions of such secrecy that the outcome is never published. He knows of one fatality which followed injection of merely 0.3 gm., and acute mania developing in a paralytic after one injection. P. Marie's experience with salvarsan has been satisfactory, he said, and he has never had

October 8, No. 121, pp. 1275-1290

133 Physiology of Secretion of Urine. II. F. Bottazzi.
134 Total Inversion of the Uterus; Two Cases. (Sull'inversione dell utero.) M. Fasano.

October 10, No. 122, pp. 1291-1298

135 Scarlatinal Uremia; Recovery After Lumbar Puncture. (Caso di uremia scarlattinosa curato con la puntura lombare.) G. B. Allaria.

131. **Diagnostic Intradermal Reaction in Syphilis.**—Fontana has experimented with various substances, sodium glycocholate, lecithin, etc., injecting them into the skin by the *intradermal technic. None proved reliable for eliciting a specific reaction except a glycerin extract of syphilitic livers or superficial lesions.* Scraps of a condyloma lata, swarming with spirochetes, were triturated with five times their weight of neutral glycerin and after standing for ten days in a cool place the fluid was filtered and distributed in vials fused and kept at 56 C. (132.8 F.) for an hour on three successive days and then set aside in a cool place again for two months when the "syphilin" was ready for use. *In sixty-seven tests, the* syphilin gave positive findings in 47.5 per cent. of the cases while the Wassermann reaction was positive in 85 per cent.; *in the primary and tertiary phases the two reactions constantly paralleled each other.* The method is thus not without value and when the technic is further perfected may prove important.

132. ***Autoserotherapy in Serositis.***—*Cariani expatiates on* the good results attainable by reinjection of some of the patient's own effusion, Gilbert's method, especially when supplemented by local iodin treatment.

Policlinico, Rome

October 8, XVIII, No. 41, pp. 1289-1320

136 Salvarsan in Syphilis. G. Burzi and De Favento.

October 15, No. 42, pp. 1321-1352

137 Serotherapy of Gonorrhea. (Sull'azione curativa del siero antigonococcico.) V. Fisichella.
138 *Extraserous Transposition of Testicle in Treatment of Hydrocele. (L'eversione della vaginale del testicolo nella cura dell'idrocele.) A. Cernezzi.

138. **Eversion of the Tunica Vaginalis in Treatment of Hydrocele.**—Cernezzi has applied the Longuet technic for extraserous transposition of the testicle in nineteen cases since 1903, bilateral in three, with prompt and permanent relief. *He emphasizes the necessity for making the incision* over the upper pole of the tumor as thus the lips of the *serosa can unite better afterward and form the sheath for* the cord. Also that a silk suture before the catgut suture holds the parts in place better. He also warns against the slightest unnecessary torsion of the testicle, and adds that it is unnecessary to drain.

Riforma Medica, Naples

October 9, XXVII, No. 41, pp. 1121-1148

139 Experimental Anaphylaxis from Gastric Juice in Diagnosis of Cancer. (Ancora sulla anafilassia da succo gastrico.) S. Livierato.
140 Experimental Research on Pharmacologic Action of Salvarsan. III. (Ricerche sperimentali sull-azione farmacologica del Salvarsan.) L. Ferrannini.

Ugeskrift for Læger, Copenhagen

October 12, LXXIII, No. 41, pp. 1485-1532

141 *Anatomic Conditions with Anemia and Other Diseases of the Blood. V. Ellermann.

141. **Possible Infectious Origin of Pernicious Anemia.**—Ellermann discusses the typical changes in the marrow in the long bones, the myeloid changes in the spleen and liver, the *gastritis and the secondary fatty degeneration and siderosis* or excess of iron. None of these changes is characteristic exclusively of progressive anemia and all of them may develop in consequence of the action of some toxin. The resemblance between the morbid anatomy of pernicious anemia and that of myeloid leukemia is striking. Another notable resemblance between them is in the remissions in the disease. Irregular fever may also accompany both these conditions and the prognosis is equally grave for both. His research on fowl leukemia has shown still further resemblance between the two and has demonstrated that the leukemic changes in the blood are not the essential feature of the disease as they were often lacking in the early stages and sometimes disappeared during the course of the disease, and in certain instances never developed at all; although the marrow, spleen and liver showed the characteristic changes. In other cases there was merely intense anemia and changes in the bone marrow. He has encountered also in the clinic these same three forms, namely, the true leukemic, the pseudoleukemic *and the anemic. The* last mentioned form has so many points in common with pernicious *anemia that he is inclined to regard the* latter as the extreme type of the former. Arnsperger has reported an epidemic of five cases of myeloid leukemia in a small district and five other cases in which the clinical picture seemed to be the sa but no examination was made of the blood. Bie has a reported two cases of myeloid leukemia in a family and W and Gilbert have reported pernicious anemia in two broth and the child of one, and Patek *no less than five cases in* *family. The general conclusion from* Ellermann's resea *is that as an infectious origin is now accepted as* possible leukemia, especially the myeloid form, the same etiology m *be* accepted for progressive pernicious anemia. This assun tion would explain the remissions and latent phases, as malaria and syphilis; also that the only possibly efficient d seems to be the parasiticidal arsenic, and the reason it pro ineffectual at times is because the parasites become pr against the drug, just as trypanosomes *may* become arser proof. If the gastritis is assumed to be the first cause of *disease this does not explain the* origin of the gastritis. Tl anemia can be an infectious syndrome is shown by Carré a Vallé's report in regard to a filterable virus as the cause anemia in horses, and that of Trincas' for the anemia of do while Ellermann's own research has demonstrated a filtera virus as the cause of fowl leukemia.

Books Received

Books received are acknowledged in this column and s acknowledgment must be regarded as a sufficient return for *courtesy of the sender. Selections will be made for review in* interests of our readers and as space permits.

A Text-Book of Pathology. With a Final Section on Po Mortem Examinations and the Methods of Preserving and Exam ing Diseased Tissues. By Francis Delafield, M.D., LL.D., Emeri Professor of the Practice of Medicine, College of Physicians a *Surgeons, Columbia University, New York, and T. Mitchell Prudd* M.D., LL.D., Emeritus Professor of Pathology, College of Physicia and Surgeons, Columbia University, New York. Ninth Editio Cloth. Price, $5.50 net. Pp. 1114, with 687 illustrations. N York: William Wood & Co., 1911.

Electricity: Its Medical and Surgical Applications, Inclu ing Radiotherapy and Phototherapy. By Charles S. Potts, M. Professor of Neurology, Medico-Chirurgical College, Philadelphi With a Section on *Electrophysics by Horace Clark* Richards, Ph. Professor of Mathematical Physics in the University of Pennsy vania, and a Section on *X*-Rays by Henry K. Pancoast, M.D., Pr fessor of Röntgenology in the University of Pennsylvania. Clot Price, $4.75 net. Pp. 509, with 356 illustrations. Philadelphi Lea & Febiger, 1911.

A Handbook of Medical Diagnosis in Four Parts. I. Medic Diagnosis in General. II. The Methods and Their Immedia Results. III. Symptoms and Signs. IV. The *Clinical Applicatio* For the Use of Practitioners and Students. By J. C. Wilson, A. M.D., Professor of the Practice of Medicine and Clinical Medicine the Jefferson Medical College, Philadelphia. Third Edition. Clot Price, $6. Pp. 1438, with 418 illustrations. Philadelphia: J. Lippincott Co., 1911.

Diseases of Infants and Children. By Henry Dwight Chapi A.M., M.D., Professor of Diseases of Children, New York Pos Graduate Medical School and Hospital, and Godfrey Roger Pisel M.D., Professor of Diseases of Children, University *of Vermon* *Second Edition.* Cloth. Price, $4.50 net. Pp. 636, with 181 illus trations. New York: William Wood & Co., 1911.

Orthopedic Surgery. By Edward H. Bradford, M.D., Surgeon to the Boston Children's Hospital, and Robert W. *Lovett, M.D.*, Asso ciate Surgeon to the Boston Children's Hospital. Cloth. Price, $3.50 net. Pp. 410, with 364 illustrations. New York: William Wood & Co., 1911.

Operative Obstetrics, Including the Surgery of the New Born. By Edward P. Davis, A.M., M.D., Professor of Obstetrics Jefferson Medical College, Philadelphia. Cloth. Price, $5.50 net Pp. 483, with 264 illustrations. Philadelphia: W. B. Saunders Co. 1911.

Manual of Physiology for Students and Practitioners. B H. Willoughby Lyle, M.D., B.S., F.R.C.S., Assistant Ophthalmic Su geon to King's College Hospital, London. Cloth. Price, $4. P 747, with 135 illustrations. New York: Oxford University Pr 1911.

The Fourth Physician. A Christmas Story. By Montgom Pickett. Illustrated by Gordon Stevenson. Cloth. Price, $1 Pp. 144, with illustrations. Chicago: A. C. McClurg & Co., 1911.

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DISTURBANCES OF RESPIRATION DUE TO NUCLEAR AND INFRANUCLEAR DISEASE [*]

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Among what may be termed the triumphs of modern medical investigation, there are probably none more interesting historically or more illuminating in their results than investigations in external and internal respiration.

Although physiologists have greatly enlarged our views and knowledge of the subject, respiratory phenomena do not enlist the interest of clinical men so much as the growing knowledge of respiratory physiology warrants.

Physiology of respiration involves a number of problems, viz.: the lung as an aerating organ, the mass movement of blood, the partial pressure of carbon dioxid and oxygen in alveolar air and circulating blood, products of metabolism and finally the nervous control of respiration which may be modified by alterations in the bulbar respiratory center cerebral cortex and pulmonary branches of the vagus.

I propose to describe some alterations in the nervous control of respiration which occur in several diseases we commonly see, tabes dorsalis, sclerosis of the brain arteries, tuberculosis of the mediastinal lymph glands and aneurysm of the first portion of the aorta.

Several years ago I read a paper before this Section in which were described some experiences with patients who had incipient tabes. These patients exhibited grave symptoms after receiving one-quarter of a grain of morphin hypodermically. The patients suddenly lost consciousness and ceased breathing for twenty minutes. During this period of unconsciousness with suspension of respiration there was such pronounced vasomotor relaxation in the arteries of the extremities that there was a centripetal pulse in the veins of the hands which was distinctly visible and palpable. Artificial respiration was employed for twenty minutes when suddenly automatic respiration was resumed and with it consciousness returned, the arteries and veins both contracted and the centripetal venous pulse disappeared. At that time I made a careful search in literature to find some instances of death after small doses of morphin to see if some of these cases might not be of the character I described. None could be found in literature but after the publication of the article I received several communications from physicians who had seen such cases. One of them is of particular interest, as it ended fatally and suggests the probability of other unpublished cases. The case was reported to me by Dr. Poate of Black-Creek, N. Y.

The patient was a young man in the pre-ataxic stage of tabes who was given ¼ grain of morphin with 1/200 of sulphate of atropin on account of girdle pains. Forty minutes after the injection, the patient became unconscious and ceased breathing. The physician, who had left the house, was hastily summoned. Fully forty minutes elapsed from the time apnea and unconsciousness began until the physician was again in attendance. The patient's heart was still beating, but feebly and irregularly. Death occurred within a few minutes after the physician's return, so we can be sure the heart continued to beat for nearly three-quarters of an hour after respiration ceased.

This is the only case I know of the kind which proved fatal but, as five cases were privately reported to me directly after the publication of my article in 1907, it seems probable that among the unreported cases there are some which ended fatally. My own two cases and four of those reported by other physicians regained their tolerance for morphin after the tabes made further progress. I mention this point at present as it has some significance in common with other instances of apnea which have been ascribed to an elevation of the threshold of the respiratory center. I have seen several patients with cardiovascular disease who were greatly distressed with slumber apnea and waking hyperpnea early in the progress of their disease before air hunger from vigorous exercise during the waking hours made its appearance. And yet these same patients were not disturbed by slumber apnea a year later when the slightest muscular exercise was followed by distressing air hunger.

Some patients with cardiovascular disease develop Cheyne-Stokes breathing after a moderate dose of morphin. Other patients who suffer from Cheyne-Stokes breathing during their waking hours, or have their rest disturbed by slumber apnea and waking air hunger, seem to suffer less from the symptoms we associate with a high threshold of their respiratory center after the administration of morphin. This is contrary to our expectation if we are dealing purely with the sensitiveness of the respiratory center to the partial pressure of carbon dioxid and oxygen in the arterial blood. It is a common experience to see a patient with arteriosclerosis develop Cheyne-Stokes breathing immediately after a hemiplegia from arterial thrombosis develops and then recover from all respiratory symptoms as he recovers from his hemiplegia. Yet during all these periods there will not be the slightest indication of any change in the mass movement of blood.

A few years ago I saw a man 65 years old who had marked arteriosclerosis with a high blood-pressure, great cardiac enlargement and anasarca, whose chief distress was alternating apnea and hyperpnea. During the apneic periods, which lasted from thirty-five to fifty seconds, he became drowsy and

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which it was seen, just as we take advantage of the Fowler position in every case of pelvic sepsis.

Our experience convinces us that, while it is a mistake to imagine that we have in bacterial vaccines a panacea for all infections to the exclusion of surgical drainage and general supportive measures, vaccine therapy has a place and serves a distinct purpose as an adjunct to the established forms of treatment. Our experience includes thirty-one patients suffering from streptococcic metritis, twelve of staphylococcic bacteriemia, twenty-eight of streptococcemia, thirty-seven of thrombophlebitis of the pelvic or femoral veins, thirteen of infected pelvic hematocele, sixteen of acute streptococcic salpingitis with peritonitis, fifteen of acute gangrenous appendicitis with peritonitis, forty-eight of colon bacillic and mixed pyelitis, simple and complicated with pregnancy, eleven of pelvic cellulitis due to mild staphylococcic and streptococcic infections, fifteen of pelvic abscess and two of mastitis, besides several others due to pulmonic conditions following from infected foci in the pelvis.

When the human organism attempts to overcome an infection, whether it be puerperal or non-puerperal in its origin, the battle against the bacteria and their toxins is waged by Nature, by the production of certain substances in the serum of the normal blood, known as bactericidal substances, that kill the products of these bacteria. There are also present in the blood, opsonins, which combine with the bacteria themselves and so alter them that the phagocyte can destroy them, and finally, the human organism further protects itself by the elaboration in the blood-stream of certain antitoxins, specific antibodies, which combine with and neutralize the toxins. The streptococcus, staphylococcus and gonococcus are little, if at all, affected in their activity by the bactericidal substances, but are readily opsonized and ingested by the phagocytes; consequently, if we are to carry out the processes of Nature in combating local or general infections, it is necessary to increase the phagocytes, for phagocytosis is one of the cardinal fac[illegible]s in producing an artificial immunity. This can be [illegible]terial vaccines, if these vaccines are but used [illegible]n the septic process. It is when the [illegible] that most can be expected from vaccine [illegible]n which we have failed to produce [illegible]cial phagocytosis by the injection of [illegible] [illegible]mia of virulent type has existed for some time prior to instituting treatment. We have further found that in a large proportion of infections, even when the clinical symptoms have shown severe manifestations, the blood-culture was sterile or that it necessitated repeated blood-cultures to isolate the organism in the blood. While theoretically it is never wise to begin treatment by vaccine injection until the organism producing the infection has been isolated, we have found that were we to depend wholly on the demonstration of the infection in the blood, much time would be lost before the administration of the vaccine. We have therefore depended largely on the culture taken from the cervix, from the interior of the uterus, from the pus or serum evacuated at the time of operation, to determine the nature of the infection.

Autogenous vaccines of a single strain have given us unreliable reactions. This, I think, can be explained by the fact that the coccus is attenuated in its strength and, after it has produced its first reaction, the leukocytes become more or less accustomed to the particular variety of coccus, and are less liable to effect a defense than when a vaccine of polyvalent strain is introduced.

The mixed vaccines of reliable laboratories have given better results than when a single variety was used. This has been shown repeatedly in the blood-picture, when an autogenous vaccine of single strain used in large doses, even up to 500,000,000, has failed to increase the leukocyte-count or diminish the polynuclear percentage, the mixed vaccines of several strains have promptly produced a marked leukocytosis. Even colon bacillus infections, such as the infection of a pelvic hematocele by the colon bacillus, have yielded more promptly to mixed vaccines of polyvalent strains than when a single autogenous germ has been used.

One characteristic which has been noted throughout all of our experience is that, even before any definite effect has been noted on the temperature, the well-being of the patient has seemed to be improved by vaccine injection. The dosage has been a matter of considerable experimentation.

It is almost impossible for the ordinary physician to figure out the opsonic index of the individual patient under his care, but it is very simple for him to determine the necessary dosage by making blood-counts and estimating the polynuclear percentage before and after the injection. It is our custom to examine the blood from four to six hours before vaccination is made; we then begin with comparatively small doses, 25,000,000 to 100,000,000, and eight hours later reexamine the blood. This shows us whether or not the dose given has been sufficient to change the leukocyte-count; if it has not made any change, the injection is repeated on the next day in larger dosage; if, on the other hand, there has been a marked rise in the number of leukocytes, or there has been any change in the polynuclear percentage, we wait for the beginning of the negative phase before repeating the injection, and when it is repeated the dose is doubled or trebled.

The foregoing suggestion has been demonstrated to be of greatest value when infection is due to the streptococcus. In mixed infections or in colon bacillus infections, we have been in the habit of giving an initial dose of from 200,000,000 to 250,000,000, as a hyperbacteriemia, resulting from the patient's incompetence to produce his own antibodies, is less liable to occur when the infecting organisms are of low or of mixed variety.

After these general considerations, it may be of interest to note the special effect of vaccine therapy in each of the several classes of cases that have come under our observation. Thirty-one patients with streptococcic metritis of septic origin, following abortion, labor or intrauterine instrumentation, were treated by injection of bacterial vaccines. In all a marked increase in the leukocytic resistance of the patient was noted immediately after the injection. Three patients died of general peritonitis, ten developed a streptococcemia, which cleared up under the continued use of polyvalent strains of streptococci.

Of the twelve patients with staphylococcic bacteriemia, eleven recovered under the vaccine treatment alone. The one fatal instance is of special interest as it occurred after a normal labor in my hospital service, in which the house surgeon, after waiting an hour and a half for the third stage to terminate, removed the placenta from the interior of the uterus. This removal was done with the gloved hand.

The patient at the time of delivery had a hemoglobin of 39 per cent., a white-cell count of 6,000 and a red-cell count of 2,100,000. Within forty-eight hours her temperature rose to 105 F. and continued to range between 100 and 106 F. for thirty-two days, making marked and sudden remissions two and three times daily. No local focus was ever demonstrated before death or at the autopsy. Staphylococci in large numbers were isolated from the blood. Autogenous, stock and mixed vaccines and serums were used repeatedly and continuously, without any effect on the leukocytosis. The blood-count steadily decreased and the patient died of a complicating pneumonia.

Of the twenty-eight cases of streptococcemia, six ended fatally. The patients were all very sick and the infection well developed before their admission to the hospital. It was noted in these cases, in which the streptococcic vaccine of an autogenous strain was used, that the leukocytic resistance which was produced was much less positive than when polyvalent stock or mixed vaccines were used.

In the thirty-seven cases of thrombophlebitis of the pelvic and femoral veins in which bacterial vaccines were used, we believe that we have demonstrated that the thrombophlebitic extension is arrested and that the recovery is hastened by the use of vaccine therapy. In all of these cases we have used the mixed vaccines of polyvalent strain, such as suggested by my colleague, Prof. J. M. Van Cott of the Long Island College Hospital. The effect after injection in this class of cases has been almost miraculous. The temperature has promptly dropped after injection, the well-being of the patient improved and the pulse correspondingly strengthened.

Mixed vaccines were again used with noticeable effect in thirteen cases of infected pelvic hematocele following undiagnosed or neglected ectopics. Here again the effect of vaccination on the character of the drainage was promptly noticed. How much vaccination has accomplished in the management of the sixteen cases of acute streptococcic salpingitis in which vaccines were used is not definitely determined, for the patients were treated, not only with vaccines, but with the Fowler posture, starvation, the Murphy drip, etc. We have noted, however, that injection of the mixed vaccines in this series seemed to produce a more prompt and a higher leukocytic resistance than was noted in a corresponding series in which no vaccines were used.

Again, in acute gangrenous appendicitis with peritonitis, fifteen cases of which are included in this report, the vaccines have been useful as an adjunct in the individual defense, but we feel that it was the surgical methods rather than the vaccines that resulted in these recoveries.

Of the forty-eight cases of pyelitis included in this series, fifteen were complicated with pregnancy, two patients aborted spontaneously, one abortion was induced and the remaining patients were treated by posture, the copious ingestion of water, the free use of hexamethylenamin and vaccination with the mixed vaccines of the colon bacillus, the streptococcus and the staphylococcus. All the patients recovered.

The effect of mixed vaccination was very impressive and stands in marked contrast to vaccination in pyelitis, when said vaccination was made with the colon bacillus alone. In all, the temperature improved within twenty-four hours after the first injection and in but six cases was there any rise after the second injection. It is a fact that colon bacillus could be demonstrated in the urine for a considerable period after all general symptoms and local tenderness had subsided.

The eleven patients with pelvic cellulitis who were treated by vaccination in conjunction with the Fowler position, ice and an enema, all recovered, but showed no special changes for good or bad, either in the blood-picture or in the clinical evidence which could be attributed to vaccination. This also holds good in the fifteen cases of pelvic abscess, in all of which the treatment was incision and drainage, in conjunction with vaccine therapy.

In contrast with these last two classes of cases, I want to mention two cases of parenchymatous mastitis. In each, stab-wound discharge had been repeatedly made by the attending physician without avail. In both of the cases injections of mixed streptococcic, staphylococc and colon bacillic vaccines, were used, which had a mo marked effect on the local condition in changing t character of the discharge, diminishing the glandul infiltration as well as reducing the temperature a improving the pulse.

In this summary of our experience we must adm biased as we were against vaccines, that in thromb phlebitis, in colon bacillic and mixed pyelitis, and as adjunct to incision in mastitis, vaccines have prov their value beyond question.

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ABSTRACT OF DISCUSSION

Dr. F. T. Andrews, Chicago: I would like to ask a f questions; for instance, the laboratory work and the work Dr. Polak's predecessors, on which he founds his own wo have gone to show that it is a dangerous proposition to vaccine in cases of acute infection. Acute infections are the kind of cases that Wright indicates, yet Dr. Polak seen not to hesitate to include the acute with the chronic. Anoth question: How great is the local reaction at the seat of t lesion; not the seat of injection? We have always been taug that the immediate effect is to increase the local inflammati very much. It seems on that account also a reason that do not dare to do this thing, and if we dare, we all want do it. He speaks of three deaths from streptococcic infectio were those acute cases or chronic?

Dr. John O. Polak, Brooklyn: The acute cases in t very early stage are favorably affected by vaccine. Whe there is a distinct bacteriemia with very little leukocyte defen in the acute stages, I think that vaccines will decrease rath than increase the resistance of the patient. There are ve few bacteria to each cubic centimeter of blood withdrawn a sometimes even these are lost. Six examinations were ma on one patient with a virulent infection and I did not su ceed in getting the bacterium until the last culture. Tak the septic abortions, of which we have a large number, an treat them with the usual local procedure and there is imm diately the exacerbation of temperature from manipulatio Now if we give a dose of mixed vaccines we do away wit the exacerbation and the temperature continues along wit out the elevation we formerly got from manipulation. I ha no fear in using it in acute stages when it is used ear enough. Unless we do that, it should be used in small dose In a case of septic endocarditis with puerperal sepsis wi streptococcic infection, the patient came in with a leukocytos of 4,000; polymorphonuclears, 91 per cent. She was turn over to my service by the medical men and watched throug out her treatment. I began with injections of 10,000, increa ing to 25,000 in six-hour injections instead of the heroic do advocated by so many. I could see after the second injectio a marked increase in leukocytic count. I continued the inje tions until the leukocytic count was very high and the patie showed a corresponding clinical improvement. This was th only case of extreme virulence which showed such marke reactions as to be definitely apparent in the blood-pictur The local reaction has been absolutely negative. I think vaccine adds to the defense after local reaction has been established by Nature. In exudate cases, after everything has quieted down, if we continue the vaccine we get exacerbations. The three streptococcic deaths were in puerperal and miscarriage cases. I get these patients, as a rule, about four or five days after the confinement or miscarriage. These cases are usually injected within the first week.

THE PROBLEM OF STATE CARE OF DRUG AND ALCOHOL HABITUES[*]

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Whenever a problem concerning the body politic or the stability of society or its well-being presents itself to the general public for solution, that general public has its interest aroused and held by sociologic societies, civic and women's clubs, pulpit speakers, chambers of commerce, newspapers and innumerable other agencies. This combined public interest points the way to the governing civic bodies and helps them to a greater or lesser degree in the matter of arriving at the most satisfactory solution.

Whenever a problem of public hygiene and health whether of white plague or black or red, whether of meningitis or acute infantile paralysis, confronts the minds of the public, that public turns instinctively to the opinions and plans of the medical advising and governing bodies for advice and direction.

In the matter of the first problem, leadership is never lacking; leaders are not slow in collecting in their wake a sufficient following to lend weight and strength to their investigations and conclusions.

In the problem of the second sort, the workers in the field seeking the solution present less diverse types than do the first. It usually rests with men whose minds are prepared by special education, by professional training and the instinct which develops with such training, to seek the basic cause of the difficulty. This located, the medical profession has never been averse to pointing directly to the answer.

We are coming now to a third type of problem, viz., that problem which presents a civic and politico-economic side on the one hand and a distinctly medical side on the other. In the consideration of one of this type, we have the necessary coordination of the lay or purely civic organizations and the medical bodies which are more or less exclusively scientific. Each, strong in its own field, is prone to revolve in the circle of its own ken and in the end the scientific man must invade the field of the civicist; that is, he must trespass on ground without the scope of his own direct work, in order to bring the results of his own investigations to a practical demonstration.

Sometimes in the solution of all three types of problems, thinking, conscientious men are attacked, their investigations are interfered with and belittled, and their conclusions are assailed. This especially applies to those cults and isms which approach any conclusion of the legitimate medical profession as one prompted by selfish interest and worthy of attack. However, these attacks have their virtues, for they constitute a "proving by fire" which makes for more thorough investigation. At any rate, it has a more salutary influence than has the deadly indifference to both investigation and conclusion, which so often is encountered in the consideration of any question which is really stupendous and far-reaching.

While all of this is trite and savors much of platitude, it is the history of the lay, civic and medical consideration of the disease, the neurosis, the habit, the crime—whatever one wishes to call inebriety.

The medical profession has long called this incubus a disease, while the general public has looked on it merely as a vicious habit due to the wilful immorality of the habitué and there remains in the mind of the public the almost ineradicable idea that if this is a disease it is incumbent on the medical profession to cure it. We have pointed the way, but because of the unbelief of much of the public and the limitations of the medical man in the course of his treatment, we have been and are, in the main, unable to answer to the challenge: "Cure."

With the limitations placed on us, and the hopeless indifference of the public both in private and civic capacity, the majority of medical men have tacitly acquiesced in the *laissez-faire* policy which has hemmed this subject about since cognizance has been taken of the futility of the usual police court dealing with the inebriate.

Every writer on this subject prefaces his remarks with a definition of the condition and does what he can to make deductions as to the pathologic states and their needs. The first legislation on the subject was the Inebriates' Act of 1879 in England. In a footnote in the first report of the Inspector for Ireland for 1903-1904 (p. 16) the following comment is made:

> "'An habitual drunkard' (or inebriate) is defined under the Act of 1879 as meaning a person who is, by reason of habitual intemperate drinking of intoxicating liquor, *at times* dangerous to himself or herself or to others or incapable of managing himself or herself or his or her affairs."

Dr. Irwin H. Neff in a paper before this section last year read six conclusions which, in his own words, "may be considered as an attempt to establish a clinical entity for inebriety."

I will quote only the first:

> "Inebriety is an expression of nervous weakness or nervous instability; used in the simplest sense it could be called a psychoneurosis, many cases showing symptoms which are found in neurasthenic states and allied conditions. Addiction to alcohol is a symptom of an unstable nervous system, and the contrary view, expressed by laity, is not justified by clinical observations or experience."

Inasmuch as the first serious attempt to deal with the question was made in England, a few words on the working of the inebriate law there will not be amiss.

INEBRIETY LEGISLATION IN ENGLAND

After thirty years of more or less effective legislation in England, the Home Secretary desired a report from a committee appointed to investigate workings of the Inebriates' Act. The committee was appointed in 1908, and consisted neither of agitators nor officials concerned in the administration of the acts, but of magistrates, members of Parliament and representatives of the medical profession. During this hearing before the committee, the following facts were brought out:

> "During the years between 1865 and 1870 public opinion became impressed by the need of some means for the proper treatment and control of inebriates, the then existing method for dealing with them being simply the resort to fines with the possibility of repeated short sentences of imprisonment. . . . The futility of short sentences of imprisonment was widely recognized alike among prison authorities, visitors to prisons, and magistrates who saw the same drunkards coming habitually before them, in no way improved by the short prison sentence. . . . The feeling culminated in the appointment of a select committee in 1872 and the subsequent presentation to Parliament of a bill designed to meet obvious requirements. The report of that select committee was emphatic. Some of its suggestions have not yet been carried out, although their truth and efficacy has become more and more obvious." (Minutes of Evidence Relating to Inebriate.)

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[*] Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

The act of 1879, as presented to Parliament, consisted of two parts; one providing for the voluntary commitment and a second providing for the compulsory commitment of inebriates. But the people were not prepared for such a far-reaching measure, and probably shied at anything partaking of the nature of temperance legislation as quickly then as they do now, and the act was shorn of its compulsory phase.

In 1892, active interest in the subject was again displayed and a departmental committee was again appointed. Their recommendations led to the passage of the act of 1898 which permitted the incarceration of inebriates who came within the purview of the law, because of crimes in which drink was a contributing cause, and those who had been convicted of drunkenness three times within a year. *Under the act of 1879,* during thirty years, thirty-two private licensed or certified institutions were established, an average of twenty have been in constant operation, and 7,500 patients have entered voluntarily. These voluntary entrances are really entrances under the effect of much pressure on the part of relatives and friends.

During the five years ending in 1908, Lady Henry Somerset's Retreat housed about 500 inmates and only twenty of these came absolutely of their own accord.

Under the act of 1898, fourteen institutions were in operation, handling a sum total of 2,770 patients. The number of reformable persons sent to these institutions is much less than was anticipated. A considerable number of persons committed from police courts were violent, unmanageable persons, who required stronger measures than it was desirable to enforce in certified reformatories. During the first twenty-one months of the act's practical existence, eleven inmates proved themselves too uncontrollable to be dealt with in certified reformatories, and had to be discharged. This led to the establishment of state reformatories, in which were received only the refractory cases.

The first home established provided no special occupation for men, and provided no means of segregation. The women were provided with a certain amount of outside work and were to some degree segregated.

The principal difficulties confronting those who were seeking the solution of the problem in England were and are:

1. Popular indifference and unbelief.
2. Establishment of homes or retreats by inadequately endowed charitable organizations.
3. Absence of police control in the retreats established. Refractory patients were perforce discharged if they were only bad enough, and a premium was thus placed on misbehavior.
4. Lack of trained attendants in the retreats. This, in the words of Lady Henry Somerset, "constitutes one of the greatest secrets of the weakness of the plan."
5. Lack of classification of cases. Many people are classed as inebriates who are in reality habitual criminals with inebriety added.
6. Lack of practical knowledge as to the time necessary for care of curable patients.
7. Lack of a definite uniform system of identification and parole.

There is an old saying about experience being an unfailing teacher and some one has added to that: "But not the other fellow's experience." "The other fellow's experience" has been a long time in making any impression on the voting and tax-paying public in America. On the few enthusiastic souls who have been laboring in the field, both the medical men, officers and sociologists, it has left its imprint, and they have struggled courageously if somewhat vainly to pass the message on to the public.

The *campaign of education* which they have instituted has resulted in a few states in well or badly balanced efforts in the direction of care for cure and control of the inebriate user of alcoholic liquors and narcotics.

But this is a representative form of government an the American public stands somewhat aghast at an thing which savors of paternalism. Some one has said "This is a government of the people, for the peopl *and by the representatives* of the people." Unfortu nately, representatives of the people stand aghast at an measure which requires missionary work to make acceptable, and especially when it centers or revolv about anything which savors of that politically taboo word "temperance." Again, granting that legislato are willing to enact legislation along this line, they ha before them the question of patronage; and patrona has ever been a potent word to the politician.

In the establishment of some at least of these instit tions in the past: (1) politics have not been elin nated; (2) attendants have not been chosen with clo attention to their absolute fitness; (3) means have n been placed at the disposal of the staff, if trained, enable that staff to accomplish the best results; (4) t type of commitment has been wrong; (5) the time commitment has been too short; (6) opportunity f proper occupation has been lacking; (7) the governi boards have not been chosen with a view to their fitn in the direction of such institutions.

In several states, laws have been passed permitti the incarceration of inebriates in hospitals for the i sane, for cure and control. At the annual meeting the California State Medical Society, this year, tl policy was defended by a medical man who had be engaged in the work in Pennsylvania. He consider that the results were very satisfactory. In connecti with this, permit me to quote Dr. Frank Woodbu secretary of Committee on Lunacy of the Commonweal of Pennsylvania:

> "These patients, strictly speaking, are not insane, and not come under the supervision of the Committee on Lunac and are really intruders in the hospitals for the insane. N being insane, they constitute a very troublesome class, they are very discontented and are constantly exciting t other patients to insubordination and are plotting their esca from the institution." (Personal communication.)

Dr. George Donahue, superintendent of State Hosp tal for Inebriates at Knoxville, Iowa, says:

> "While I can conceive that the commitment of the inebria to the state hospitals for the insane is not the most desira plan, it is the one that has usually been adopted by the old states as a beginning of an inebriate institution. After th are cared for at the state hospital for the insane for some tim a separate hospital is soon established for them." (Perso communication.)

During the months from September, 1910, to Marc 1911, I sent out approximately 500 letters of inquir concerning:

1. The need of a state institution for the care o inebriates, with or without pay beds for those able t pay.
2. The wisdom of a state institution as above, plu the licensing of private institutions for the care o patients for cure and care of patients for control.

Approximately 300 replies were received. Out of all of these writers there were *five* who denied the wisdom of such a policy, stating that the law of some states permitting the incarceration of inebriates in hospitals for the insane to be quite sufficient.

One medical man who had had ten years' experience in state farm-work wrote:

> "To put the case in a nutshell, state institutions have been disappointing for the reason that the majority of the patients sent to state institutions do not have a sincere desire to be cured. I believe that every state should have a good moderate-price institution where inebriates could be given proper care at moderate cost, or at the cost of the state if necessary, but I have no faith in spending money trying to cure people who do not care to be cured."

Thirty-one agreed as to the need of a state institution but emphasized the need of licensing private institutions for the care of those able to pay, for two reasons:

1. Desires of patients to go to private rather than public institutions.
2. Large amount of capital invested at present in thoroughly equipped private institutions.

Fifteen condemned the licensing of private institutions under state supervision as always being inefficient and characterized by lax supervision.

Ten writers approved state institutions for legal commitments of alcoholic offenders and both types of institutions for voluntary commitments, but considered the delegation of any police power to a private institution to be injudicious and impractical.

Twenty-one approved of some pay beds in state institutions for voluntary commitments, and enforced payments of costs of maintenance by those under commitment following arrest, if such individuals were possessed of sufficient means to pay.

The remaining replies assented to state control plan without comments. The analysis of these replies, sent from representative men and organizations all over this country and from England, places practically all of them on the endorsement side of state institutions for care and control.

The licensing of private institutions is sparingly endorsed, the quality of the supervision is questioned, the delegation of police power is condemned, and a serious question is raised as to the ability of such private institutions to provide occupations for inmates. This makes a limited endorsement of the voluntary curable patients only, for private institutions under state license. Private institutions as places of mere detention are out of the question.

If then it be admitted that a state institution is necessary, there remain two things to consider:

1. What has been accomplished?
2. How may the results be increased?

The limits of this paper permits considering the methods and results in but a few institutions and of these we will choose the following:

1. Foxborough State Hospital (Massachusetts).

During the time from April 1, 1908, to Oct. 1, 1910, there were 777 new admissions: of these, 324 were counted favorable, i. e., cases of patients likely to be cured or to receive marked benefit from treatment. The unfavorable numbered 453.

Abstinent since discharge, 28 per cent.
Much improved, earning livelihood, 21 per cent.
Unimproved, 36 per cent.

Of sixty-two subjects of morphin addiction discharged, 18 per cent. have remained abstinent. Many of the cases were not at all desirable from a hospital point of view.

Foxborough has asked for, and lately received, something like 1,200 acres of ground for use in connection with its institutions and they are expanding both in the number of occupations possible to follow and in the amount of work done along any one occupational line. They are, however, still struggling with the problem of voluntary commitments terminable at will, and with the problem of handling the mildly insane in the same institution.[1]

2. Knoxville, Ia.

The authorities at Knoxville, Ia., sent out 774 letters of inquiry concerning inmates who had been committed and released during the previous two years and received 365 replies. Of the individuals concerned in these replies, thirty-eight had never returned home, 214 had not relapsed, fifty-four greatly improved, twenty-nine relapsed after a year or two, thirty began drinking at once and eight were reported worse than before commitment.

Of the entire number treated, 214 known to be cured plus 105 who are making regular reports, but concerning whom answers to the letters were not returned, gives us 41⅓ per cent. cured and living up to their parole.[2]

The present needs of the institution are greater opportunity for industrial occupation, shops of various types where, after an inmate had recovered sufficiently to do a reasonable day's work and had become profitable enough to cover some of his own expenses, a wage allotment could be made to him, to go to his family or to be reserved for him on his parole.

One of their chief difficulties is the restraint of their patients and this is emphasized by their experience in failing to control them while they made use of the insane hospital plan, prior to adopting this present one.

A personal communication from a member of the Board of Control of State Institutions of Iowa says:

> "While the institution has done a great deal of good, it has only been partially successful. If run along the lines that we have been using, we do not think it would be advisable for your state to start such an institution. This institution should be conducted as a hospital and the supervision and control should be similar to that in the state reformatory or penitentiary. We intend to do that with our institution in the near future."

3. Duxhurst, England.

This institution, a private licensed one founded by Lady Henry Somerset and superintended by her, emphasizes occupation, relaxation and *religious influence* in the care and control of these cases. Refractory patients are sent to state farms.

In a personal communication, in March this year, she says:

> "We take no patients under one year. Our medical man reckons that, taking the sixteen years over and calculating cures only at two years, we have about 60 per cent. of cures."

Her testimony given before the investigating committee emphasized the need of *intelligent* supervision of licensed institutions, trained staffs and more complete segregation of cases.

New York City, enabled by a special act of the legislature, is now perfecting and putting into force what will probably prove to be the most complete example of meeting the problem that has yet been devised. It consists of a proper system of identification and parole, sentences for repeaters graduated from a minimum sentence of six months to three years at the State Hospital, under parole regulations and on the undeterminated sentence plan, sending repeating incurables to the state farm for three years and recommitting them on release as necessary.

This serves to emphasize what this body already knows about this subject, and if one will turn to the reports of state boards or of the National Conference of Charities and Corrections, one will see it all stated clearly and explicitly. But, unfortunately for the progress of the plan, the general public does not read them, and up to this time the reports have not found an audience through the columns of the public press.

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[1] Annual Report, Foxborough, 1911.
[2] Supt. Second Biannual Rep., Knoxville, Iowa, 1908.

If Neff, Crothers, Homer Folks, Bailey Burritt and many others equally well informed could gain the public ear, there would not be so much evasion in the handling of a subject which the whole world is forced to admit has been dodged rather than met.

Rosanoff's statistics showing 28 per cent. of cases of insanity in New York, and 30.6 per cent. of the cases in Massachusetts to be due to alcohol, together with the investigation of others showing a percentage greater than either of these in the causation of imbecility and epilepsy, must of necessity bring to the minds of all who cease their running long enough to read, the necessity of legal intervention in the matter of control of the incurable and in the direction of the cure of the curable alcoholic.

Statistics concerning alcoholism, imbecility, epilepsy, idiocy, crime and poverty are always incomplete and misleading. But if one will take the time to go through one institution for the cure of defectives; if one will investigate as far as possible, and in the incomplete way that such things must be investigated, the life history of one small group of exceptional children, one can draw conclusions that can be made interesting and instructive to the public. If one will consult with active members of any board of charities and will direct one's attention merely to the cost to charity of the mighty problem of alcohol, some further facts of the value to the public can be elicited.

If one will direct another line of inquiry to any board of charities in any given place, and exclude all doubtful cases, one will be appalled at the number of homes disordered and disorganized by the same agency.

If, in still another direction, one will turn one's attention and estimate the tremendous cost in jail and police court expense, to say nothing of the cost of maintaining such patients in public hospitals and almshouses, where again they constitute an exceedingly trying and disturbing element, one can easily gather data to show the tax-paying and tax-voting public the economic value of institutions for cure of curable and control of incurable drug and alcohol habitués.

Inebriety absolutely surrounds the questions of the spread of tuberculosis and the red plague, and if the medical profession will include it in its campaign of education on the latter subjects and individually and collectively seek to induce the general public and the mouthpieces of the general public to become interested in this, it will make tremendously not only for the saving of much now ill-spent public money but also, what is of infinitely more importance, it will mark an epoch in the conservation of human values.

CHRONIC ALCOHOLISM

WHAT CAN AND WHAT CANNOT BE ACCOMPLISHED BY TREATMENT *

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Until the last quarter of a century, alcoholism was almost universally regarded as a mere moral perversion, a bad habit entered into and continued because of moral degeneracy. Numerous efforts were made to reclaim and reform the drunkard. Almost all of these consisted in an appeal to the moral and emotional nature of drinking men and many were thus influenced to abandon the use of alcohol, but a large majority were unreached by these efforts. In more recent years, the wretched condition of these men has appealed strongly to scientific men who were students of human nature as well as of abstract science, and the causes or influences which lead such men to enter on and continue the use of alcoholic beverag has been studied from every view-point. These studi have fully established the fact that only in a very sma percentage of cases is alcoholism a mere moral perversion, but that it is in the truest sense a disease, a disea having a well-defined and demonstrable pathology. Sin the disease theory of chronic alcoholism has be accepted, the questions have naturally arisen: What c be done by treatment for this disease? Is it curabl To this last question both an affirmative and a negati answer can be made and each will be correct wh applied to a certain class of cases.

Chronic alcoholism is not only a disease itself, but many instances it springs from other diseases and it certain that other diseases grow out of it. These diseases may be either physical, mental or moral. To cu any disease, the cause must be removed. In some cas of alcoholism this can be done by treatment, in oth it cannot; hence the question naturally arises: W class of cases is curable and what is not? In endeavoring to answer this question, it is necessary to consi the type of the addiction as well as the influences whi led to its formation. For the purpose of study, as w as for treatment, it is best to divide alcoholic subje into two general classes, regular drinkers and periodi drinkers.

There is wide difference between the influences whi lead the periodic alcoholic to go on a spree and th which prompt the regular drinker to continue the use his beverage.

REGULAR DRINKERS

Probably 80 per cent. of all persons who habitua drink alcoholic beverages form the habit inadvertent unintentionally and without any definite purpose in vie Among them may be found persons of the highest ai who, primarily, had sound bodies and minds and go habits, but who began the use of alcoholic beverages a social way or with the erroneous idea that the effe of the alcohol would protect them from some prevale disease, such as malaria, etc. Such persons continue t use of alcoholic drinks without mature thought as their effects on them and certainly without any purpo to go to excess or to dissipate in any way; but no matt how begun, the frequent use of even a small quantity alcohol creates a demand for increasing quantities, a this grows by almost imperceptible degrees until the is a daily consumption of considerable quantities of son alcoholic drink.

For a time the effects of this beverage seem improve the health, to impart greater mental and physical vigor and generally to promote the well-being of th subject, but these benefits are more apparent than rea In fact, they are not real at all. The effects of thi agent having merely built up a state of apparent hypernutrition by increasing fatty metabolism and decreasing waste. In this manner an unwholesome bodily state i brought about in which the demand for the effects o alcohol is increasingly felt, and because of which the victim is only comfortable when under the influence of alcohol. Almost imperceptibly the demand for stimulants grows, the victim becomes more and more depend-

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

ent on them and larger and larger quantities are required to meet this demand.

The daily consumption of these considerable quantities of alcohol necessarily brings about such changes in the system as to create an imperative demand for their continuation.

After reaching this stage, the victim feels that he cannot begin his day's work without his morning drink; there is a degree of lassitude, a lack of vigor which he seems totally unable to throw off without the aid of his stimulant. As the disorders growing out of the use of alcohol progress, one drink is not sufficient to give the desired support, then two, three or more are taken in close succession and this bracing process is continued throughout the day, from day to day and from week to week.

The effects of this prolonged and free use of alcohol bring serious impairment of the digestive organs, the appetite is variable or absent altogether unless freshly stimulated by an extra drink and if, at this or any subsequent stage, the victim makes an effort to discontinue drinking, such a state of nervousness arises as to drive him to resume the stimulant. The entire system has by this time become so saturated with toxic matter that a condition of intolerable nervousness arises whenever the system is allowed to get from under the now sedative effects of alcohol, and no matter how acutely conscious the victim may have become of his slavery to alcohol or how heroically he may struggle to throw off the yoke, he finds himself unable to do so by his own efforts. The prolonged free use of alcohol brings on such disorders of the system as to lead the best of men, when in its grasp, to continue to seek relief from these disorders by increasing the quantity of alcohol consumed. Whether that course is imperatively necessary or not, it appeals to them as being the one readily available remedy, the panacea for every ill, and it is so used.

A majority of habitual users of alcohol in this country belong to this class, and many of them would gladly quit drinking if they could ever get the poison out of their systems and reach a state in which they could live in comfort without it, but they seem never to be able to do so. They never become entirely sober and their systems are never normally free from the products of tissue waste; on the contrary, they are habitually in an extremely toxic condition and are comfortable only when the paralyzing effects of alcohol blunts their sensibilities to the irritating effects of this poison.

In habitués of this class, the addiction has a purely physical basis which is the product of alcohol alone. This consists of both structural lesions and functional derangements, but the structural lesions have little influence toward impelling the victim to continue the use of alcoholic drinks. The functional derangements are the only disorders growing out of the use of alcohol of which he is conscious, but these throw him into extreme distress when he attempts to go without the aid alcohol gives him. These functional derangements consist mainly of a chronic catarrh of the stomach, accompanied by an intensely toxic condition of the system, but as these yield readily to proper treatment, alcoholic patients of this class are curable. It is folly to talk to a man in such condition as this about reforming his life and stopping the use of stimulants by his own efforts. The forces which impel him to continue the use of alcohol are stronger than any will-power he is able to exert. In order to put him in condition so that his own will, his normal impulses may control him, his system must be thoroughly renovated and the physical demand for the effects of alcohol removed, then his moral nature can assert itself and then, and then only, can he control himself by the exercise of his will-power.

In the second class of regular drinkers I would place a small percentage of persons who were born with, or who from disease in early life acquired, a defective physique and an unbalanced nervous system, persons who, because of such defects have never been normal either in nervous system or physical organization. When such persons, in seeking something to overcome their habitual discomfort, experience the effects of alcohol they readily fall victims to its seductive influences. For a time it seems to fill the vacant place and to be the one thing lacking in their lives; it overcomes that discordant nervous condition which they so much dread, and they feel that they have found a panacea for all their ills, but this relief is of short duration. The demand for the effects of alcohol grows very rapidly in such persons and its continued use brings on the same pathologic changes that it does in others. The system soon becomes extremely toxic. This irritating matter greatly aggravates their former nervousness, so that the two conditions together now make such an imperative demand for the effects of alcohol that the victim cannot resist it and he keeps himself constantly saturated with alcohol; in fact, after reaching this stage, he must do so to enjoy the least degree of comfort.

But little can be expected from treatment in this class of cases unless it is found that the original discordant nervous element can also be removed by treatment. When it is found that these causative conditions are such as to be amenable to treatment, and the treatment for the addiction embraces not only such treatment as would be necessary to give relief in an ordinary case, but also such other measures as may be required to restore the primarily unbalanced nervous system to a normal condition, much benefit may be derived from treatment even in these unpromising cases, provided a reasonable degree of moral fiber was originally present.

In a third class I would place another, relatively small proportion of regular drinkers. To this class belong those who drink as a pure dissipation, persons who are deficient in moral fiber, lacking in purpose, supremely selfish, willing to gratify the desires of the present moment at any cost to themselves or others; those who are simply drifting through the world without rudder, compass or objective port.

These defective traits of character may be due either to inherited tendencies or to early environment. Persons of this class drink because they prefer to do so, and they would return to the use of alcoholic drinks even if some one took them up and gave their system a thorough renovating and removed all physical necessity for the effects of such drinks. In cases of this class, more than human agency would be necessary to effect a cure. Not only would it be necessary to renovate their bodies and put them in normal physical condition, but it would be necessary to effect a most radical change in their moral nature, a complete transformation of their purposes in life, and nothing short of the grace of God is sufficient for such a work. Human agency will not avail.

Fortunately, only a small proportion of the regular drinkers belong to either of the two classes last mentioned; the great majority are of the class first described in this paper. They are men of good families, of excellent traits of character, of high aims, chivalrous, generous to a fault, truthful and honest; in fact, most of them are men with whom no fault can be found, except this one weakness, and that due to the fact that they have fallen into the clutches of this monster. Victims of this class continue to drink only because their will-power and self-control and their ability to estimate correctly their own condition, have been so undermined by the effects of alcohol that they cannot extricate themselves from its clutches, they cannot of themselves retrace their steps. On arising in the morning, they find themselves totally unable to begin their day's work without the bracing effects of alcohol, and because of the urgency of this physical demand they continue to seek what relief they can get from it from day to day. When such men as these are freed from the domination of alcohol, when the physical demand for it is overcome and they are put in a normal condition, they almost invariably remain permanently free from it. Failure to benefit permanently such men as are described in the second and third divisions above mentioned should not be allowed to discourage us or to render us less enthusiastic in our efforts to rescue the more numerous and really noble army of enslaved ones.

PERIODICAL ALCOHOLISM

There is a wide difference between the influences which lead to periodic alcoholic sprees and those which lead the regular drinker to continue the use of his beverage. Periodic alcoholism may spring from a variety of causes, but these may be studied to advantage under four types which may be enumerated as follows: (1) dipsomania, real or symptomatic; (2) moral cowardice; (3) bad environment, with lack of stability of character; and (4) bad environment, with an ever-present but usually successfully resisted appetite for liquors.

Dipsomania

Dipsomania is defined to be "an uncontrollable desire for strong drink," but this term should be restricted to those cases in which this desire or impulse springs from a real mental disorder, a true mania. It should not be applied to cases in which the desire for drink only becomes uncontrollable when it is excited or intensified by some general physical derangement, or to cases in which the desire is continuous. A better definition would be: Periodic insanity taking the form of an uncontrollable desire for strong drink.

Real dipsomania is very rare, but that it does exist cannot be denied. Most writers leave the impression that such attacks are due entirely to some obscure structural brain lesion or inherited mental defect. It is doubtless true that there are persons in whom a real mania of this type occurs because of an inherited mental bias or perverted nervous organization, independently of the general physical condition, but, in my judgment, such cases are extremely rare. In a large majority of cases which are thus classified, the attack occurs only when excited by an added general systemic derangement, such as an *acute intestinal toxemia*. The irritating effect of this toxic matter serves as an exciting cause of an outbreak. In many instances these attacks may be warded off or prevented altogether by keeping the system free from toxic matter.

Where outbreaks of this kind occur solely as the result of an inherited mental defect, treatment cannot be expected to be of material benefit; but in cases in which such attacks occur only when an exciting cause, such as an acute toxemia, contributes its influence, then treatment can be a material benefit, provided it embraces such instructions in the manner of living as to enable the victim to avoid the occurrence of these toxic states.

Moral Cowardice

Another and probably the most hopeless class o periodic drinkers are those who drink as an expression of moral cowardice. These are men who have no particular craving or appetite for liquors who will say at almost any time that they do not care for the taste or primary effects of alcoholic drinks, but who have learned from experience that alcohol will blunt their sensibilitie and bring them surcease from cares and worries whic they have not the manhood and moral courage to tak up and bear, and from time to time they seek forgetfulness in the effects of alcohol. A man of this class wil quarrel with his wife or a friend and go off and ge drunk for spite, or he may have some adverse busines experience which to others would be trivial, but he, no having the moral courage to face it, runs from it an seeks oblivion in the effects of alcohol.

Little if any good can come from treatment in patien of this class. Therapeutic measures cannot remove fro their lives these defective traits of character or impa *to them that degree of moral courage which is needed* fit them to fight the battles of life in the open and resi the adverse currents which drift them from a safe an sober mooring.

Instability of Character with Bad Environment

In another class of periodic drinkers the sprees a due to bad environment coupled with instability of cha acter. These are the social drinkers who lose contr of themselves as soon as one drink is taken. Many these are men of estimable qualities, amiable, chivalrou good-hearted, kind, and *in every way lovable men*, b they are deficient in self-control, fixed purposes an positive traits of character. They are good-nature fellows who drift with the current and allow others dictate their course. These men, when away from the drinking associates and out of temptation, remai entirely sober and would not think of going alone an deliberately beginning to drink; they have no craving appetite for liquor which they are not fully able control, but they are negative characters and whe thrown with drinking associates they do as others d They are of the type of social drinkers who lose contr of themselves as soon as they are slightly under th influence of liquor. When once started, such men continue to drink until some one takes control of them an assists them to get out of the adverse currents. Then period of entire sobriety follows, only to end in anothe spree when they again come under these unwholesom influences.

Treatment in such cases can be successful only whe followed by an entire change of environment. No only must the old associates be given up, but the on seeking to reform his life must be thrown with sobe and moral people whose positive influence for good ove him will be sufficient to enable him to stand firmly i his new position, notwithstanding his defective traits o character.

Bad Environment with an Ever-Present but Resisted Appetite

Another type of periodic drinkers are those who have an inherited or acquired thirst or craving for liquor which is ever present with them, but who, from strong convictions, contend against this weakness with a courage that in many cases is really heroic, and, under favorable circumstances, they succeed in controlling themselves but, when thrown with drinking associates, or when brought under other strong temptation, they find themselves unable to resist both the ever-present thirst and the temptation. Under these circumstances they begin to drink, and as soon as one drink is taken their resisting power is gone, and they throw themselves into the spree with a vigor and abandon which is not known to the more timid or less resolute. They continue to drink until the stomach rebels and will no longer retain the liquor; then they go through a period of extreme distress and remorse, and finally get back on their feet.

Periodical drinkers of this type are more amenable to treatment than any other form of periodical drinkers, because the craving, the thirst against which they contend, can be overcome—in fact, entirely destroyed. In addition to this, their attitude toward liquor can be so changed as to render its taste, smell and effects repulsive to them. When men of this type are given this much aid, they find themselves quite able to contend successfully against the influence of drinking associates and to resist other currents of influence which, when associated with their former craving, would have been sufficient to cause them to fall.

PRINCIPLES OF TREATMENT

Before undertaking to treat any disease, we should endeavor to ascertain the nature of the condition to be met; whether such a condition has a real, structural pathology or is only functional derangement, and whether it is a physical or a mental disorder. That the prolonged use of alcoholic drinks does cause serious structural lesions of the brain, liver, stomach and other organs cannot be denied, but such lesions are not the only or even the principal reason for the continuation of the habit. In some cases, as we have seen in the preceding, the use of liquors is continued from preference, or because of some mental or moral defect, but in the great majority of cases alcoholic drinks are continued because of a strong demand in the system for their effects. The habit has a real physical basis. This demand for the effects of alcohol is due mainly to the toxic condition of the system. Alcohol blunts the sensibilities of the nervous system and retards the excretion of the products of waste. The life of the human organism is a continuous process of waste and repair. When the excretion of this waste is retarded, even to a slight degree, day by day, the system finally becomes so saturated with poisonous matter as to cause serious functional derangement of every organ in the body. One in this condition finds it necessary to keep the nervous system constantly blunted with the effects of alcohol or other narcotic in order to obtain a reasonable degree of comfort. While it is true that alcohol has caused these disorders, still its effects relieve the acute distress springing from them more promptly and in a manner more acceptable to the sufferer than anything else with which he is familiar, therefore he continues to seek what comfort he can get by taking more alcohol, and thereby burns the taper at both ends.

In endeavoring to bring about such a change in this condition as to render the further use of alcohol unnecessary, the first and most important step is thoroughly to cleanse the system from the products of waste which the effects of alcohol have forced it to retain. In doing this the bowels, kidneys and skin should all be made to do their full share; in fact, for a time these should be made to do many times their ordinary duty.

Just in proportion as the excess of toxic matter is eliminated will the nervous system become quiet and the urgent demand for the effects of alcohol disappear. As a rule, in the course of three or four days the system may be so cleansed of toxic matter as to permit the withdrawal of alcohol without risk or discomfort to the patient. I do not consider it safe, or at all advisable, to withdraw alcoholic liquors abruptly from one who has been using them in large quantities without first preparing the system for such withdrawal. After the system is properly prepared for the withdrawal, it may be made with safety and without discomfort, but I cannot agree with the arbitrary rule of cutting off the alcohol as soon as the patient is taken in hand.

Up to this point, the treatment in the several classes of alcoholic cases is practically the same, as all of them require elimination of the toxic matter and the withdrawal of alcohol, but from this point on, the several classes will require radically different lines of treatment. The particular nature of the treatment required to complete the cure will depend on the cause, or set of causes, which originally led to the formation of the habit, as well as those which have had an influence in its continuation. If these were purely mental, then treatment calculated to overcome a mental disorder should be given; if they were moral or social, then these influences should be looked into and every effort made to direct the patient's future life so as to protect him from these damaging influences and prevent a return to his old haunts and habits.

If the patient belongs to the more promising class, the regular drinkers in whom the habit was continued because of the usual mental bias favorable to the use of alcohol, and because of the deranged physical condition resulting from its effects, then the succeeding step in the treatment should be to neutralize or eliminate the remnant of alcohol remaining in the blood, to overcome any appetite which may remain for it, and to supplant the mental bias favorable to alcohol with a dislike or complete disgust both for its taste and effect. The means available for these purposes are so numerous and their application so varied that they do not admit of detailed discussion in an article of this kind. In addition to the well-known therapeutic agents—static and other forms of electricity, vapor, shower, neutral or electric baths — suggestion, and in some cases even hypnotic suggestion, discipline and physical training can be used to advantage.

While these corrective measures are being employed, active therapeutic measures calculated to overcome the catarrhal condition of the stomach should also be used. This condition is the remaining disorder which would exert the greatest influence toward a return to the old habit, because of its effects in impairing digestion.

Fortunately, catarrh of the stomach yields readily to treatment in these cases after alcohol has been discontinued, but active treatment for this disorder is essential, and it should be continued until all trace of it has disappeared and the patient's digestion is perfect. He should be able to eat and enjoy three good meals a day. Patients of this class need the strength derived from a hearty breakfast to take the place of the support they formerly received from alcoholic stimulants. No part of the treatment is of greater importance than this, since, if it is not successfully carried out, the patient will not be so secure from relapse as he should be. Impaired digestion, with its attendant lack of strength, operates as an ever-present influence suggesting the need of some stimulant, some outside supportive, and this amounts to an autosuggestion to take a drink. This is a dangerous condition for the patient to be left in.

The indications to be met in some cases of alcoholism are simple, and the treatment can be easily carried out, while in others they are so complicated that the resources of the best-equipped institution as well as the skill of the most resourceful physician will be taxed to the uttermost; but with the aid afforded by a well-equipped institution a competent physician can effect as large a percentage of cures in cases of chronic alcoholism as can be effected in any other serious ailment. The most skilful physician cannot treat patients successfully at their homes. The disadvantage due to their home surroundings and to lack of complete control over the patient will defeat his best efforts. Even a general hospital does not assure the physician such control and protection as this class of patients require.

I do not feel that I should close this paper without a warning against any institution or physician offering to send a home treatment for alcoholics or drug victims. Such an undertaking is worse than folly, and when a proposition of that kind does not spring from entire ignorance of the conditions to be met, it is prompted by criminal avarice. Especially fraudulent is the offer to send a remedy that can be administered in coffee, etc., without the patient's knowledge, and thus overcome the desire for liquor and break up the habit.

THE THREE-DAY LIQUOR CURE

The time required for the successful treatment of a case of chronic alcoholism varies from two weeks to two months. Those who promise to effect a cure in much shorter time than that, promise more than they can perform. A "three-day liquor cure" is being advertised extensively throughout the country, and a number of institutes have recently been opened for the employment of this method. This treatment consists of the administration of a dose of cathartic pills and after that the hourly administration of an emetic in liquid form, the emetic consisting of either lobelia or ipecac or of the two combined. An hour and a half from the time of giving the first dose of the emetic, the patient is required to take a drink of whatever alcoholic liquor he has been using and this is repeated every half hour until four drinks have been taken. All of these are promptly given over to the slop-jar with interest. The liquid emetic is kept up every hour for the first day, but only the four drinks are offered to the patient. If he asks for more liquor, it is given and this is followed by an extra large dose of the emetic, sufficient to insure immediate and prolonged vomiting. The second and third days' treatments are the same, only the emetic is given at less frequent intervals, and only two drinks are required to be given on the second day. If the patient asks for more on that or on the third day, it is given and this is followed by a double dose of the emetic.

The extreme nausea and vomiting from this course, if the patient can be made to take it, is supposed to disgust him so completely with whisky that he will not take it again. By the time he has been kept in this condition for three days, he is so disgusted with whisky, himself and everything else that an effort to swallow anything will cause him to vomit. It is true that he does not want whisky, because he is not in condition to take and retain anything, but he is no more cured of the whisky habit than he would have been had he drank until his stomach rebelled and had vomited three days and nights from the effects of whisky. His system is still in a badly disordered condition; he is extremely nervous and cannot sleep, is totally unfit for business and if he recovers it is because of the restorative forces of the system and not because of any curative effect the treatment had on him. Such sleight-of-hand fake methods cannot be too strongly condemned. There is no curative value in them and the public should be taught to avoid them.

In undertaking the treatment of alcoholic patients, the physician should take a comprehensive view of the patient and his surroundings and endeavor to estimat correctly every influence which has in any way con tributed to his enslavement, and to direct the life of th patient thereafter so as to remove every one of the hurt ful influences, as far as is possible. The physical ma must be completely renovated and every function of th body restored to normal activity. The mental bia favorable to the use of alcoholic liquors must be erad cated and in its stead a positive aversion to alcohol mu be established. The patient is to be given a new chan in life by being put on his feet with a clear head, in fu control of all his faculties and free from the dominatin influence of alcohol. The consummation of such a wo is certainly worthy of the best efforts of any man.

958 South Fourth Street.

ABSTRACT OF DISCUSSION.

ON PAPERS OF DRS. CROSBY AND PETTEY

Dr. S. Grover Burnett, Kansas City, Mo.: In 133 yea China and Eastern Asia paid to the Eastern India Importati Opium Company $2,100,000,000 profits, or over $1,600,000 year. They used annually 42,000 tons of opium; of the 43 000,000 of people, 25,000,000 were addicted to opium, one four of the entire population, 50 per cent. of the men in cities, and 20 per cent. of the women. Not one mother 1,000 can read or write her own language. This opium add tion has been going on 600 years, until they have practica obliterated their educational memory centers, losing all des for choice recreations such as are enjoyed by our civilizati I should have said that they have twenty-six opium addi to the square mile. I have forgotten the figures that Ameri has in her consumption of opium and cocain, but it is mo than fifteen times what we should be using. We can simp look back and see China's acquired psychology, her men obliteration, and what we are coming to in this country if do not put a stop to it. Dr. Crosby has given us somethi to think about, and a method of doing it.

Dr. A. W. Hoisholt, Stockton, Cal.: I am fully in acco with Dr. Crosby and his paper, and the part particularly th refers to the fact that the asylum is not the place for t care of the alcoholics. Our chairman from Minnesota stat that his state cares for them on a farm for inebriates. I thi that is the ideal way. They should be cared for in instit tions gotten up especially for them. I have had some twen years' experience in a hospital for the insane and I can sa that all the hospital has done for them is to keep them fro liquor, partially. It hasn't even done that thoroughly, becau the Stockton Asylum is inside of the city limits. The ci has two hundred saloons, and you can imagine what happe when a patient is given parole. It happens frequently, a the situation is far from satisfactory. When I visited Ge many some years ago, at Dahldorf, near Berlin, they at th time received alcoholics in a building on the grounds of th institution, and the physician in charge said it was very unsa isfactory. Now it has been done away with, and in German a few years ago it was the unanimous opinion that the publi should not care for the alcoholics in the hospitals for th insane. In California the last legislature passed a law tha says all cases of alcoholism, as a punitive measure, should b sentenced to six months or a year or more in a hospital fo the insane. Well, I pity the patients who will be sent there I wrote to the governor and tried to get him not to sign th bill, but it was signed; the commission wanted it signed, an it was done; but when you realize that the hospitals of thi state are so crowded that patients are sleeping on floors, an that the asylum at Stockton is inside of the city limits, in town of two hundred saloons, you will understand that it is not the proper place. They do not at all get the social surroundings nor educational influences that they should have; they are not influenced in the right direction.

Dr. H. G. Brainerd, Los Angeles: The paper of Dr. Crosby telling us that 38 or a larger per cent. of the insanity of the patients in the insane asylum is directly due to alcohol, and the diagrams which Dr. Patterson so graphically presented to us of the feeble-minded, showing the number produced by alcohol, would seem to me to be strong arguments in favor of some provision for the care of those who are breaking down through the use of alcohol. We say that tuberculosis is a preventable disease. We should get at the root of the matter and prevent the spread of the disease. Certainly if tuberculosis is a preventable disease, alcoholism is a preventable disease. What opium has done for China is being done for America by alcohol. The opium in China is certainly no more disastrous in its effects than alcohol in America. The opium habit in China was due simply to the rapacity and greed for money of the authorities. The continuation of the alcoholic habit in America is due certainly to a lack of provision for the effects of alcohol in some direction. It seems to me that the effort should be not alone towards taking care of those ruined through alcoholism but in preventing alcoholism.

Dr. Ross Moore, Los Angeles, Cal.: We are at the present time establishing a municipal farm at which men who are convicted or accused of alcoholism, who would otherwise be put on the chain gang, or in jail for sixty or ninety or a hundred days, will be given an opportunity to reform—a work cure, with a physical examination, diagnosis and proper treatment, together with a reasonable degree of freedom. No doubt it can be worked out so the physician will determine whether or not a man is capable of staying on the farm with only a reasonable degree of restraint; that is, whether he is a degenerate criminal, or whether he is a man who is drunk and might be cured of drunkenness. Our insanity commission has met with the problem of the drunkard with reference to the asylum. The judge here has tried two or three times to send some men there for habitual drunkenness. When I have been on the commission he has not succeeded. I don't know whether he has sent anybody up there at any other times or not. I don't believe they belong there under the present constitution of the asylum. With reference to Dr. Pettey's paper, I think I have not heard for a long time as elaborate a classification of the drunkard. My own experience with drinkers has caused me to make a diagnosis before I take them for patients—a differential diagnosis as to their mental capacity. If I decide that a given patient has sufficient mental capacity, I make a contract with him to be under my care or supervision for at least six months. Then, I am in the habit of givin a three- or four-day treatment, possibly a modification of the belladonna treatment, and then, having this contract with the man, if he does not show up when I want him, I go where he is, or I have my office girl 'phone for him, and thus I keep in touch with him for some months. Almost every patient has several rough places during the first six months. He has a hard time in many ways, and is just on the verge of taking a drink; he is tired, or other causes are at work. During these six months, seeing him many, many times, he gets to see himself as I see him. He begins to analyze himself, and the cause for his drunkenness, as I do, and in that way I secure a permanence of cure which I never succeeded in securing before. Therefore, my idea of the treatment of a drug or alcoholic habitué consists in a vigorous eliminating treatment to begin with, and six months of care afterwards, during all of which time I have practically absolute control of the patient.

Dr. G. H. Moody, San Antonio, Tex.: After an observation of a great many of these cases I am convinced that Dr. Crosby has brought out very clearly and strongly in his paper that getting complete charge of his patient for a specific length of time is necessary to get results. There are a few cases, both of the drug and alcoholic habit, whose hereditary condition is favorable, as expressed by Dr. Pettey, in whom we are justified in trying a short course of treatment, either at home with the physician supervising, wisely, as Dr. Moore has suggested, or in a private sanitarium; but I believe that the plan of this state, and that of several other states, as given by our chairman, is the only salvation for those patients who have been treated a few times with futile results. I would not have opposed the bill passed in this state for the want of a better one. I would much prefer it to none. I agree that the asylum is not the best place for these patients, but in the absence of a better place I believe they should have it. As it is, the patients who go to such an institution or asylum go there because they are crazy from the drug. In two or three weeks, as we all know, they are all right, and the superintendent lets them out, and they get no good results. If we had a way of committing them to these state institutions for a certain number of months or years, and the superintendent had no more power to turn them out than the officer of the penitentiary has to turn out his prisoners, then a great many would get well, and I believe it ought to be done. Of course, I think we ought to have, preferably, an institution for inebriates. Until we get it, I think the plan of California is better than no plan whatever.

Dr. J. W. Robertson, Livermore, Cal.: My experience has taught me that there are two entirely distinct classes of alcoholic patients. The first are such as the Keeley treatment appeals to. They have no hereditary compulsion. They drink because they want to drink; they drink because their associations lead them to drink; they drink because of their moral irresponsibility; they have not the strength of character to refuse an invitation to drink. This class is very easy to cure. Eddyism, suggestions which the Keeley treatment give, or willpower properly directed, are usually sufficient to control them, and for that reason I believe that a month of quiet and rest, with building up of the body and nerves, gives a temporary cure. But there is another class of patients that I must confess I regard as a more serious problem. They are those whom Dr. Crosby's suggestions appeal to. They have to be forcibly restrained. You cannot persuade them; you cannot argue with them. Very often they have such a hereditary diathesis that they are compelled to drink, and nothing but enforced abstinence for a period of six months or a year would be of the slightest benefit. Even then, after I have restrained such patients for periods of months, after the physical health has been absolutely rebuilt, and they have regained their full moral as well as physical tone, they have gone off and again become drunkards. I have met these men in after years and found them reformed and honorable members of society, and have asked them how the thing was done. I had failed with them; others had failed with them. Their only reply was that they had made up their minds to quit, and they had quit. Until a man comes to this conclusion it is absolutely impossible to do anything with him. No amount of personal restraint will do more than build up the body, and possibly build up the moral character. When they have once made up their minds to reform, and then only, have I found that they absolutely do reform.

Dr. Daniel Crosby, Fruitvale, Cal.: The subject of inebriety is so big that most medical men have been unwilling to classify and talk about it. Men of Dr. Pettey's type have been able to cure inebriety, while the remainder of us have looked on. Dr. Burnett says we are not getting at the right end. Theoretically, prohibition is the proper course, but practically we know that prohibition fails. As far as getting at the right end is concerned, we do not desire to conserve the alcoholic as such, but neither do we want the chronic alcoholics filling our city prisons and county jails; we do not want them filling our almshouses and adding thousands on thousands of dollars to the cost of maintenance of our county hospitals every year. The state inebriate hospital and farm have so far offered the best solution and England has been following the plan to a greater or less degree for twenty-five years. Minnesota, a little before New York, and the latter state now, are working out two of the best plans before the public to-day for the control of the chronic inebriate. We do not desire to conserve a worthless life, but neither do we want the worthless fellows coming up for 1,100 commitments, as did one man in New York. If this plan is not beginning at the right end, then those who are paying most attention to it are going awry in their calculations. It is not to the credit of the medical profession of California to-day that the inebriate is locked in already overcrowded asylums for the insane. The first offender should not come before the court at all, but should go before a referee and never have a court appearance. If he will be bound by his parole, very well; if he does not, then the time for court appearance is in order. It has been proved repeatedly that 25 per cent. of these individuals can be restored to normal life if they are only held long enough. Now if 25 per cent. can be rehabilitated, why tie the hands of your hospital services with delirium tremens patients and alcoholic ruins when, as a matter of fact, they can be maintained at a great deal less cost in the open air of the country than under the present plan. If the tax-paying and tax-voting public could have placed before them in plain, straightforward fashion the results of care for cure as elucidated by Dr. Pettey, and the cure and control as shown by the reports of the successfully operated state inebriate hospitals, we would not see much longer delayed this very necessary inebriate legislation.

Dr. George E. Pettey, Memphis: Some more efficient method of handling inebriates than is now provided for is certainly badly needed. Under our present system a man may waste his income, spend his fortune and pauperize his dependents by alcoholic excess and make himself a nuisance to his family and everyone about him, but so long as he commits no overt criminal act the law does not interfere and neither his family nor the community have any way of reaching or controlling him. We have gone to such extremes in our efforts to safeguard "personal liberty" that the state has lost its right to interfere with the inebriate in time to protect itself and the innocent dependents of such inebriate from the gravest wrongs. This right should be reasserted and freely used. No man should be allowed to destroy his usefulness, his productive powers, and foist himself and his dependents as a charge on the community under the guise of personal liberty. A state farm, to which the inebriate could be committed for treatment and detention and where he would be compelled to expend his energies in a productive enterprise, would, in my judgment, be the ideal way, not only to reform our present generation of inebriates but to prevent inebriety in the future. If men who abuse their personal liberty by going to excess in the use of intoxicants knew that they could be taken in charge and committed to a state farm and required to work for the public instead of themselves, they would be brought to "think upon their ways" before they had lost self-control. The existence of such a provision would furnish the most effective means of preventing the development of inebriety as well as the most practical method of dealing with it where it does exist. Our present method of haling the inebriate before a criminal court and inflicting punishment, which often falls more heavily on his innocent dependents than on himself, is as unreasonable and inefficient as it is unjust.

Energy of Radium.—Attention has repeatedly been drawn to the enormous quantity of energy stored up in radium and its descendants. That in its emanation niton is such that if what it parts with as heat during its disintegration were available, it would be equal to three and a half million times the energy available by the explosion of an equal volume of detonating gas—a mixture of one volume of oxygen with two volumes of hydrogen. The major part of this energy comes, apparently, from the expulsion of particles (that is of atoms of helium) with enormous velocity. It is easy to convey an idea of this magnitude in a form more realizable, by giving a somewhat mechanical turn. Suppose that the energy in a ton of radium could be utilized in thirty years, instead of being evolved at its invariable slow rate of 1,760 years for half-disintegration, it would suffice to propel a ship of 15,000 tons, with engines of 15,000 horsepower, at the rate of 15 knots an hour, for thirty years—practically the lifetime of the ship. To do this actually requires a million and a half tons of coal. It is easily seen that the virtue of the energy of the radium consists in the small weight in which it is contained; in other words, the radium-energy is in an enormously concentrated form.—Sir William Ramsay, President's Address before British Association for the Advancement of Science, 1911.

PREVENTIVE MEDICINE SECTIO
COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON ADMINISTRATION METHODS OF PHYSICAL EXAMINATION OF SCHOOL CHILDREN*

The committee has confined its report to the discussion the following:

I. Object of physical examinations.
II. Present methods and their results.
III. Fundamental problems to be considered.
IV. Specific recommendations.

I. OBJECT OF PHYSICAL EXAMINATIONS

Physical examinations are conducted for the purpose detecting variations from the normal that interfere with health, growth and development of the child. The norm educative process is possible only when the physical and m tal conditions of the child do not vary too widely from t established standards recognized as the normal. Evidence hand shows that large numbers of defectives are present every school.

II. A STUDY OF THE PRESENT METHODS AND RESULTS ACCOMPLISHED

A survey of the available statistics shows that there relatively few cities of the United States giving compl physical examination of school children, or even sufficien complete to be of assistance to the teachers to enable th to direct activities of the pupil.

The examinations are at present carried on for the mo part by the city boards of education. When the boards health conduct the examinations little effort is made to dete defects aside from those of sight and hearing. These exan nations have also been made by the teachers, nurses, medic inspectors or physical instructors, according to local cond tions.

A careful comparison of the result obtained by the vario methods of conducting the examinations shows that th greatest benefits are obtained in instances in which a pr liminary examination is made in the grammar schools by th teacher and defective or suspicious cases reexamined by traine medical men who devote enough of the school day to thi work to be free from interruptions of private practice durin these hours, and in the high school, where the examination are conducted by the physical director, and especially i instances in which the director is medically trained.

The examinations made exclusively by nurses and untraine or uninterested medical inspectors are often incomplete, inaccurate and of slight value, and little information is secure that is of use to the teacher in her education of the child.

III. FUNDAMENTAL PROBLEMS

The committee feels that there are a number of factors with their closely related interests which demand consideration before presenting specific recommendations on methods; these are the city boards of health, the boards of education, the parents, the family physician, the teacher, the pupil and the school physician, and their relation to one another.

The board of health is the organ of the state and has the authority of the law in carrying out its provisions. It deals with diseased conditions and enforces the sanitary standards prescribed by the state. Beyond this it ordinarily has little interest. With the board of education the condition is different. Its function is educative, and to it merely carrying out the provisions of the law is not sufficient. It must provide conditions, physical and mental, that make for the greatest efficiency of the individual. It must remove from the environment of the child factors that interfere with these conditions. This necessitates competent and constant supervision.

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* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

Many families through ignorance or pride object to having their children examined by the school authorities, and feel hat their rights are being infringed in this respect. This will ot be so if sympathetic cooperation is secured.

Family physicians have protested against the "unnecessary xaminations" sometimes not without cause, especially in nstances in which unscrupulous examiners are employed.

The family physicians are not all of the regular school. Ve find in addition eclectics, homeopaths, osteopaths, naturoaths and science healers, with their diversity of interests and raining. Their points of view must be respected and their ooperation secured. To the child the examination should be nteresting and instructive.

Objection to the teachers conducting the preliminary examinations has been raised on the ground that they have neither training nor time. The teacher's first duty is to the health of the child and her training should be sufficient to enable her to do this work.

The expense necessary in establishing and maintaining a thorough system has been a serious objection. A careful study, however, shows that it is even more expensive to neglect this important work.

IV. SPECIFIC RECOMMENDATIONS

In view of the facts revealed by a study of present conditions, the committee feels that a simple, efficient and uniform standard of methods is desirable.

The committee recommends: That city and county boards of education should secure the services of trained medical inspectors; that these inspectors be sufficient in number to instruct all elementary school teachers in making preliminary physical examinations or health surveys, and thus enable the inspectors to make more thorough supplementary physical examinations when indicated; that city boards of education maintain departments of medical inspection, the heads of such departments to be medically trained men; that the cities be divided into districts with a medical inspector in charge of each district.

That each child be given a physical examination each year, preferably at the beginning.

That this examination be sufficiently thorough to detect defects that interfere, or are liable to interfere, with the health, growth and development of the child, such examinations to include the examination of the eye, ear, mouth, nose, throat, posture, nutrition, mentality and nervous functions; that in all cases showing defects or in which defects are suspected but undetermined, reexaminations be made by trained medical examiners, such reexaminations to include the eye, ear, nose, throat, teeth, heart, lungs, thorax, shoulders, spine, hips, inguinal region, feet, nutrition, mentality and nervous system.

That the preliminary examination or health survey in the elementary schools be made by the teacher or nurse who should be instructed in making these examinations by a trained medical inspector, and in the high schools by the director of physical education, or one of his assistants.

That the supplementary physical examination be made in the elementary schools by the trained medical inspector, and in the high schools by the director of physical education, if he be medically trained; otherwise by the medical inspector; that in cases in which a defect is found the teacher be informed as to its nature and effect on the physical, mental and social development of the child and be instructed in the best methods of overcoming these defects, that a careful record be kept of the results of the preliminary and supplementary examinations, such record to include the dates of the examinations and condition of pupil at that time, and only such other data as would be of future use to the teacher or director.

That these records be kept by the teacher and passed on with the promotion slip as the child advances, a duplicate being retained in the office of the health inspector.

That whenever feasible the physical examination be conducted preferably by examiners who are employed by and are under the direction of the board of education. When this is not feasible the appointee of the board of health should be approved by the board of education.

The committee recommends further:

That a greater effort be made to establish hearty cooperation between the school physician, the teacher, the family physician, the home and the free dispensaries in following up and in securing the correction of physical defects.

Respectfully submitted,

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REPORT OF COMMITTEE ON MEDICAL INSPECTION OF SCHOOLS *

EDUCATIONAL HYGIENE: HEALTH AND DEVELOPMENT SUPERVISION

To the Section on Preventive Medicine, American Medical Association: In response to the invitation of your chairman your committee herewith presents a report for your consideration as to what is or should be the essential and vital work of a department of medical inspection in the public schools, or the equivalent department of educational hygiene, or as the work is termed in California, the department of health and development. This report is submitted as a general plan which of necessity must be modified in different ways so as to form alternative systems which shall meet the needs of local conditions.

Two divisions of this field of work are advisable.

A. *Under the control and direction of boards of education*—that part of the work essential for the intelligent handling of pupils and students throughout their period of educational training; and for the maintenance of hygienic environment and hygienic activity—the field of *educational hygiene.*

B. *Under the control and direction of boards of health*—that part of the field of work concerned with the care and control of contagious and infectious diseases as a part of the field of *public health.*

EDUCATIONAL HYGIENE—UNDER THE CONTROL AND DIRECTION OF BOARDS OF EDUCATION

PURPOSES OF THE WORK

1. The establishment of biennial, annual, and, when necessary, more frequent skilled physical and developmental examinations of pupils and students by a staff of experts. The establishment of initial examination of pupils by the teaching force of the schools, as far as the teaching force is qualified, prior to the skilled examinations by experts.

2. By effective action, based on the data of these examinations, to secure (a) the correction of physical anomalies and thus remove the growth-barriers of children and youths, and (b) whenever possible and practicable, to adjust educational activities to meet the requirements of physical and mental health, growth and development, and thus establish a special field of education for the maintenance of continuous health and development supervision of pupils and students.

3. To maintain a scientific and systematic study of mental retardation and mental deviation of pupils and students by skilled examination, and whenever possible and practicable, by skilled training in special schools.

4. To establish skilled physical and health examinations of candidates for teachers' positions prior to their election to determine vital fitness for their work, and thereafter to maintain continuous supervision of health and efficiency to teachers as related to the work of the schools.

5. (a) To organize and supervise courses of technical instruction in hygiene for pupils, students and teachers, in the means of conservation of physical and mental health, growth and development; in the means of correction and pre-

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* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at its Sixty-Second Annual Session, held at Los Angeles, June, 1911.

vention of defects, disease and degeneracy; (b) whenever necessary for efficiency, to give practical and technical instruction to the teaching force of the schools, while engaged in teaching, in the initial physical and developmental examination of pupils; and in the skilled physical and developmental and psychoclinical examination of exceptional pupils, abnormal and supernormal.

6. To establish and maintain well-equipped medical anthropometric and psychoclinical laboratories in the public schools which shall afford opportunity and equipment—

(a) for sufficiently skilful medical, anthropometric and psychoclinical examination of exceptional pupils and of all pupils requiring special examination.

(b) for such technical training of teachers in the laboratory and experimental phases of educational work, connected with the physical and mental examination of pupils, in clinical psychology and in experimental pedagogy as is essential for the intelligent handling of pupils.

(c) for essential work in hygiene and sanitation.

7. To exercise expert sanitary supervision in the planning and maintenance of school buildings and grounds.

8. To bring about the establishment of dental and medical clinics for pupils whose parents are financially unable to provide essential medical and dental aid.

9. Whenever possible and practicable, to cooperate with state, county and city health officers in the detection of and reporting of contagious diseases.

10. Each department of educational hygiene to constitute a bureau of practical investigation and research in educational hygiene, and as such to cooperate with state bureaus of educational hygiene whose functions will or ought to be the organization and supervision of state-wide work and investigation in this special field of education—looking forward to the establishment also of a national bureau of educational hygiene.

SKILLED PHYSICAL AND DEVELOPMENTAL EXAMINATIONS BY A STAFF OF EXPERTS: A GENERAL PLAN

BIENNIAL DEVELOPMENTAL EXAMINATIONS—APPROXIMATE OCCURRENCE

	Age
Upon entering school	6
Prior to transition period	8
Subsequent to transition period	10
Prepubertal period	12
Pubertal period	14
Post-pubertal period	16
Approximate attainment of physical growth	18

Annual and More Frequent Examinations.—Following a general plan of biennial examinations the frequency of examination must depend on the conditions of health and growth of individual pupils. Groups of pupils will stand out for whom annual examination will be essential. Other groups will require more frequent examinations. Examination should condition all work permits issued to pupils by school authorities. Examination in all instances should be at such intervals and of sufficient thoroughness to establish continuous and efficient health and growth supervision of pupils and students.

Scope of the Examinations.—Physical and developmental examinations should be sufficiently extensive to ferret out and determine, as far as possible, the causes of arrested growth, physical and mental.

1. The data of these examinations should serve as skilled information to parents and teachers in recommending and advising medical and dental aid essential for *health and development.*
2. When taken in connection with the school curricula and sociologic factors of the pupils' environment, the data of these examinations should form the *essential basis* for the *adjustment of educational activities*, both physical and mental, to meet the requirements of physical and mental health, growth and development.

The recommendations of the staff to the school authorities in this field of education should be:

1. General in their nature, applying to educational work as a whole.
2. Special in their application to the needs of individual pupils.
3. Advisory and cooperative, as a general working plan.
4. Administrative, when from the standpoint of educational hygiene, the health and development of pupils and students require and demand a change of educational activities or of environment. or both, and when such changes are possible under existing conditions.

The recommendations of the staff, when administrative, should be reversible only by the board of education and superintendent of schools.

This field of work is essentially administrative and c
stitutes a special field of the superintendency of schools—
or county. Modern educational hygiene is far-reaching in
demands. It looks not only to securing the correction
developmental and acquired defects, physical and ment
which interfere with health, growth and efficiency; not
to the maintenance of hygienic environment in the plann
and construction of school buildings and in the
and maintenance of school grounds, but in addition ther
it maintains "that not only the content of education, but
the processes of education should be considered in relatio
the health and growth of pupils and students. It challe
every subject of instruction and every principle and e
method in education." Its central problem is growth
development. To this end physical and developmental e
minations ought to determine defective physical and mental
ditions, developmental periods of growth and stages of deve
ment, physiologic age, and, as far as possible, mental age.
staff conducting these examinations should recommend
agencies as are essential and effective in bringing about
best possible growth and development of pupils and stud
and the school organization should be such as to afford
and means of carrying out these recommendations thr
the *cooperation* of the staff, superintendents, principals
the teaching force of the schools.

For efficiency in this work it is essential that there
continuous cooperation between a skilled staff of experts
the teaching force of the schools, which force, as far as q
fied, should conduct initial physical and developmental e
inations as an aid to the staff and as a matter of the
intelligent handling and training of pupils by the teac
force.

For definiteness the committee submits the following:

GENERAL ILLUSTRATION OF AN ESSENTIAL PHYSICAL AND DE OPMENTAL EXAMINATION

By a staff of experts and trained assistants, *for all pupil*

General Health and Growth, past and present. Family
tory (exceptional pupils). Height, weight and vit
(growth indicators).

Eyesight.—Visual acuity, approximate determination
hyperopia, hyperopic astigmatism, myopia, myopic a
matism, esophoria, exophoria, hyperphoria. Contagious
defects, other diseased conditions and exceptional feat
Color blindness (exceptional pupils).

Hearing.—Auditory acuity. Defective hearing as due
middle-ear defects or to nerve deafness. Diseased conditi
exceptional features. Pitch discrimination (exceptic
pupils).

Teeth.—General conditions and cleanliness of temporary
permanent teeth, amount of decay, exceptional features. Ex
ination of teeth to be conducted by skilled dentists whenc
possible.

Mouth and Palate.—Malformation and indications of de
eracy.

Speech.—Defects of articulation, lisping, stammering, et

Nose and Throat.—Presence or absence of nasal obstructi
diseased or enlarged tonsils, presence of adenoids, pol
catarrh, etc., and exceptional features.

Glandular Conditions.—Enlarged submaxillary or cervi
glands.

Lung Action and Respiratory Development.—Normal. Ro
or bronchial breathing. Râles—mucous, sibilant, sonoro
pleuritic. Chest development and expansion (tuberculosis
tendencies to same). Respiratory development. Exceptio
features.

Heart Action.—Normal, irregular. Murmurs, functional
organic. Transition period (8 to 10 years). Any abnorn
condition requiring modification of school conditions or ex
cises. Thorough examination conditioning physical traini

Deformity.—Deformities of head, trunk, limbs, spinal cur
ture, bone disease, deformed chest, shortened limbs, etc.

Nervous System.—Normal. Nervous instability, incipie
marked. Neurasthenic or hysterical tendencies. Chorea, ti
epilepsy, other nervous disorders. Examination of nerv
pupils with especial reference to conditioning school activiti

Sex Examination.—Thorough sex examination when advisable. Parents should be present.

Mental Condition.—Signs of overstrain. fatigue, response, etc. General intelligence. bright, fair, dull, backward. Mentally defective. Imbecile. Imagery, memory, attention. association (exceptional pupils). See psychoclinical examination of exceptional pupils.

General.—Any weakness. defect or disease specially unfitting pupils and students for ordinary school life and activities, physical or mental. and requiring modification of school activities, especially more complete examination for the determination of physical training whenever advisable—tests of strength and endurance. results of training, etc.

Physiologic and Mental Age—Development Periods.—The determination of the physiologic and mental age of exceptional pupils. abnormal and supernormal, and the adjustment of educational activities to growth and development needs (see psychoclinical examinations), and certain modifications for all pupils at transition periods of development—8 to 10 years. and at puberty.

An Approximate Grouping of Pupils.—Based on the data of physical and developmental examinations which ought to follow the examination of pupils and students.

1. Those for whom medical and dental aid is essential.
2. Those whose respiratory or circulatory systems are defective or are poorly developed, for whom a larger amount of out of door life and physical activity is essential, or other modification of school activities necessary.
3. Those whose nervous systems are defective or poorly developed and who require an unusual amount of out of door life, physical activity, special care and skilled training.
4. The segregation of pupils requiring an unusual amount of physical activity for possible mental growth—both sexes.
5. Segregation of pupils of truancy and criminal tendencies or otherwise showing more or less degeneracy, and assignment to special schools with special training.
6. Segregation of mentally defective pupils and assignment to special schools.
7. The segregation of supernormal pupils and assignment to special schools.
8. As far as practicable, the grouping of pupils in accordance with development age.

PSYCHOCLINICAL EXAMINATION OF PUPILS AND STUDENTS

The building of a stable nervous system and a well-balanced mind is the most important work of education. For this purpose physical and developmental examinations, educational and clinical psychology and experimental pedagogy furnish the essential data by which to shape educational activities.

The correction of physical defects interfering with health and development is an established field of work, definite, clear-cut and unquestioned. The physiology, psychology and hygiene of educational training, however, is to all intents and purposes a more or less unexplored field, full of possibilities and suggestions. The educational work of the past has been all too little adapted to the biologic requirements of the child at its different periods of development.

This phase of education is of the highest importance. There is a vast army of pupils in our public schools whose growth is more or less arrested. Statistics from all sections of the country show this condition. It is a safe estimate that out of 18,000,000 pupils in the public schools of the nation 3,000,000 are repeating a grade a second, third or even a fourth or fifth time at a cost of approximately $100,000,000 annually, an expense largely wasteful and preventable, to say nothing of the loss of life-efficiency.

The more extreme stages of arrested growth, namely, the idiot, the imbecile, the feeble-minded, afford features of marked educational value to the public schools. The mental age of the idiot is never greater than that of a child of 2 years. no matter what his chronological age. The mental age of the imbecile has never exceeded the 8-year level. The mental age of the feeble-minded ranges from 8 to 13 years, never exceeding the 13-year level.

Passing these extreme levels of arrested growth into our schools and homes, all grades of mental age and all stages of more or less marked arrested growth stand out. Further, we know that the predisposition to insanity and degeneracy is marked in the more extreme stages of arrested growth, markedly greater in the feeble-minded than in the ordinary population. We know further that arrests of development of the more marked type grade insensibly into the higher levels of arrested growth found in large numbers in our public schools and in our homes, and that the same predisposition to degeneracy to a greater or less extent is an accomplishment of all stages of arrested growth. However important it may be to take intelligent care of the feeble-minded, the insane, the idiots. and imbeciles. it nevertheless is these higher retardation levels that should especially concern us because of their close kinship with feeble-mindedness on the one hand, and with adult deterioration on the other.

There is a marked need of systematic and scientific study and investigation of the moral and criminal traits of delinquent and abnormal pupils of our schools; how criminal tendencies and moral defect vary with, or are related to, physical defectiveness, with type of disease, with transitory states as exhibited in certain forms of epilepsy, in delusional and maniac depressive forms of insanity and which show themselves in kleptomaniac and suicidal tendencies and other forms of degeneracy.

There is marked need to safeguard all pupils, and especially defective pupils. by skilled training, against overpressure and unintelligent handling, particularly at the transition periods (8-10 years and 13-15 years).

The marked increase in juvenile crime and juvenile insanity during pubertal years is a known condition which ought to mean much in the safeguarding of all pupils during transition periods of growth against possible weakness and inefficiency.

It is especially important to exercise essential skilled oversight of pupils prior to transition periods of growth before immoral and before criminal tendencies become fixed; before weakness and inefficiency are allowed to develop; before excellence and superqualities, physical and mental, are allowed to remain undeveloped.

SUPERNORMAL PUPILS

There is most marked need of skilled determination of the supernormal pupils of the public schools and the adjustment of educational activities to their growth and development needs. The highest excellence and genius of the race for the future is found in potential and evolutionary form in supernormal children who embody in quantitatively superior forms those capacities that are exhibited in less degree by the masses of the young.

There is a marked need of *skilled investigation* by a skilled staff of their mental capacities and of the physiologic, anthropologic, sociologic and hereditary problems underlying their evolution and of skilled handling of *these pupils*. No type of pupil has been so neglected as the pupil of highest excellence and possibilities. Exceptional talent, superior capacity and intelligence that remain undeveloped or are directed in lower lines of action, is a loss not only to the individual. but to the state and to the nation. For these purposes it is essential that in addition to the general physical and developmental examination of all pupils by a skilled staff. psychoclinical examinations of exceptional pupils, abnormal and supernormal, shall be established.

The committee submits the following statement of the problems to be met and the work to be done and of the scope of the psychoclinical examinations:

1. A practical study and investigation of the hereditary personal history, of the medical history, and of the growth and development of pupils.
2. Skilled examination for the determination of—

   a. Essential medical and dental aid.
   b. Endurance and functional development.
   c. Physical growth and development as compared with a measuring scale of normal growth of pupils of the same physiologic age.
   d. A fundamental intellectual measuring scale and the determination of mental age.
   e. The acceleration or retardation of mental growth and development [illegible] with this [illegible] intellectual meas[illegible] practicable the [illegible] of mental

functions, and the character of specific accelerations or arrests of growth; and the improvement which various capacities or traits undergo from month to month and from year to year under the training which pupils receive; and the improvement resulting from medical and dental aid.

- f. The establishment of a measuring scale of motor development and of manual dexterity development.
- g. The skilled determination of educational activities for these pupils.

To meet these problems of educational science it is essential that universities and normal schools and the public schools shall determine by measurements and tests of the growth and development of large numbers of normal, supernormal, and retarded pupils comparative standards of *physical* and mental growth, so that we may measure the differences in the capacities of the various classes of pupils, normal, supernormal and defective; also measure the differences in the rate of improvement of these capacities and adjust educational activities to meet the demands of physical and mental health and growth. These are problems for *investigation and research* and future progress. Certain definite work has already been accomplished.

The following is not given as a complete list, but for illustration of the more important part of the work. As stated above:

1. *Developmental Tests.*—Skilled physical and developmental examinations should be held for the determination of arrested growth and development; for the determination of endurance, physiologic age and functional development; of essential medical and dental aid, etc.

2. *Tests of General Intelligence.*—Binet and Simon have succeeded, after years of experimentation, in working out a series of tests by which they are able to grade with considerable accuracy the general intelligence of children. These tests make it fairly easy to determine whether a child is to be graded as idiot, imbecile, feeble-minded or normal. It is conceded by skilled specialists that these tests "give us the most satisfactory *preliminary survey* of the child that is available."

Goddard at Vineland, N. J., Huey at Lincoln, Ill., Kuhlman at Faribault, Minn., Wallin at Skillman, N. J., and others as a result of their work with the subnormal, feeble-minded and epileptic all agree with the following statement of Goddard: "I believe it is true that no one can use the Binet-Simon tests on any fair number of children without becoming convinced that whatever defects and faults these tests may have, and no one can claim that they are perfect, the tests do come amazingly near what we feel to be the truth in regard to the mental status of any child tested." At present these same men, together with other excellent scholars, are working to amplify and perfect these tests, particularly for the higher levels, and to adapt them to public school conditions. There can be no reasonable doubt but that these tests will be markedly improved.

3. *Tests of Particular and Special Abilities.*—In addition to these determinations of general intelligence, certain tests of special abilities have been successfully used in such recently established psychoclinical laboratories as those of the University of Pennsylvania, Chicago Public Schools, Vineland, N. J., Chicago Juvenile Court, Lincoln, Ill., Faribault, Minn., Clark University, Skillman, N. J., etc., as follows:

- a. Motor ability as determined by the tapping test, reaction time, etc.
- b. Sensory ability as by the estimation of weights, lengths, the discrimination of tones; etc.
- c. Perception as by the various types of form boards.
- d. Association time—controlled and free.
- e. Memory-span as by a series of digits or syllables, by aussage, narrative, etc.
- f. Imagination: (1) probable type of sensory imagery as determined by greatest ease or readiness of response to different sensory stimuli; (2) power of creative imagery as by solving of puzzles, various types of constructive tests, and by the completion test of Ebbinghaus.
- g. Ease and accuracy of acquisition of motor skill as tested by the learning of any simple, new motor coordination, e. g., mirror-drawing.
- h. Ease and accuracy of mental acquisition by association of a known with a new arbitrary symbol.
- i. Logical processes as by mathematical problems, puzzles, etc.

4. *Exceptional and Unusual Abilities.*—No series of tests for the accurate determination of supernormal or exceptional abilities either general or special has as yet been worked out and standardized. It has, however, been shown in many instances that the application of the two classes of abovementioned tests supplemented by careful observation and further testing along lines wherein the results of these tests suggest that remarkable abilities may lie hidden, do frequently make possible the discovery of that sort of talent, the recognition of which is most highly important. The desirability o standardized tests for this special purpose needs no furthe emphasis than that afforded by the statement that the peculia type of genius with which we are here concerned ver frequently escapes the notice of teachers, parents, and th child himself, and that frequently it is not called out by an *of the ordinary* school work nor by the ordinary environmen

Until standardized tests are developed we shall be compelle to use systematic observation of interests in art, musi mechanics, languages, mathematics, sciences; systemat observation of traits and capacities favorable to develo ment along these or other special lines, systematic obse vation of the *acquired interests* and special *habits* deriv from reading, companions, chance happenings, etc.; furth by taking pains to see that the pupil's range of activities sufficiently wide to call forth any special capacities which may possess. Especially desirable is it that children w *do not fit well into the usual order of* interests and activit of home and school be given such opportunity.

Investigation and research in this field of education universities, normal schools and public schools; in institutio for the feeble-minded and for the insane, is being energetica carried forward to-day and is establishing a reliable ser of general and technical tests for the examination of pup which are eventually to become invaluable in the determi tion of normal and arrested growth, physical and ment invaluable in the science of education and of human efficien The field of the expert in this work is medical, psycholo and pedagogic. It is difficult to say where it should beg and where it should end.

INITIAL PHYSICAL AND DEVELOPMENTAL EXAMINATIONS TEACHERS; TECHNICAL INSTRUCTION OF TEACHERS; SCHOOL NURSES

Efficiency in education requires a certain degree of sk and proficiency on the part of teachers to give initial physic and developmental examinations; to make reliable prelimina health and development surveys of the pupils over wh they have charge. Adequately intelligent handling of pup is not possible without the cooperation of a teaching for adequately skilled in these regards, with a staff of *experts* educational hygiene.

The committee submits the following illustration of a initial health and development examination which m reasonably be expected of teachers who are working with skilled staff:

Health.—Good, fair, poor. Frequent colds. Lack of vitalit Has been sick a good deal.

Eyesight.—Eyes inflamed, watering or painful. Crusts lids. Nervousness, dizziness, indigestion, squinting, scowlin Holding head to one side or book close to face. *Freque headaches—blurring of print.* Lack of application.

Visual Fractions ....

Hearing.—Normal. Deficient, left, right. Variable. Di charge from ears. Mental dulness apparently due to po hearing.

Teeth.—Apparently good. Decayed. Filled, crowded an irregular. Need attention. Transitional stage.

Nose and Throat.—Indications of adenoids or enlarge tonsils, mouth breathing, variable hearing, nasal voice. Lac of vitality, arrested growth, adenoid face.

Speech.—Poor articulation, lisping, stuttering or stammer ing. Poor resonance of voice.

Chest Development.—Flat chest, stooped shoulders, shallo respiration.

Heart Action.—Shortness of breath, fatigue, pallor, poo circulation.

Nervous Condition.—Undue nervousness, easily confused poor control.

Vitality.—Endurance: Good, fair, poor. Fatigues: Easily, slowly. Cause ....

Physical Development.—Growing well—poorly—undergrown. Muscle coordination—good, fair, poor.

Development Age.—Exceeds—is less than—numerical age.

Mental Development.—Good, fair, poor. Arrested growth—precocity. Response—quick, slow, strong, weak. Type—sensory-motor. Memory—good, fair, poor. Attention—good, fair, poor. Association—good, fair, poor.

Ability to Do School Work.—Good, fair, poor. Excellent in .... Deficient in ....

Repeating the grade ....

Retarded in normal progress.......................years.

Causes of Retardation.—

Special Data.—

Further, efficiency requires that teachers of special classes and special schools should develop to a considerable extent the insight of the skilful diagnostician. Special classes and schools constitute the nascent field of educational advance and require the highest order of skill in education.

That effective work and cooperation of a skilled staff and teaching force may result, it is, therefore, essential that the members of the staff give more or less technical and laboratory instruction and demonstrations to teachers, in the initial and skilled examinations and technical instruction in educational hygiene. There is a marked need at present of more or less practical and technical instruction of this order.

The universities and normal schools in the past have not organized their courses of education with sufficient emphasis on the thought that health and development was the first purpose of education and that informational work was secondary and accessory.

Whatever the university and normal instruction may be, there will always be more or less need of practical and technical instruction of teachers by a staff of experts in the field of educational hygiene, when teachers are engaged in field work, in which educational problems are nascent and full of meaning to teachers, pupils and to the state.

SCHOOL NURSES

In this program, school nurses are assistants to the staff. Their field work is essentially as follows:

To assist members of the staff in the skilled examination of pupils and otherwise as assistance is needed.

To assist teachers in making preliminary surveys of their pupils and in giving initial examinations, notifying parents of essential needs of pupils, etc.

Visiting parents and in all justifiable ways establishing effective cooperation between home and school.

Further, the function of the school nurse is that of the social educator in the field of hygiene. As such, the work of the school nurse is one of high order.

The staff of experts, the teaching force of the schools and school nurses, *working from the standpoint of education*, form an educational corps to secure the effective cooperation of home, school and school authorities in meeting the requirements of the physical and mental health and growth of pupils. When educational means fail, the law must remedy instances of neglect of health and growth of children.

THE TEACHING OF HYGIENE

One of the most urgent vital needs of the schools is the practical and effective teaching of certain phases of biology, physiology, psychology, educational and public hygiene. It is the field of prophylaxis in education as well as in medicine, a field requiring the effective cooperation of both education and medicine.

This field of education is yet in its infancy. An efficient department of educational hygiene in the schools under the direction of a skilled staff is essential for its growth and development.

PHYSICAL AND HEALTH EXAMINATION OF TEACHERS

The health of the teachers is one of the most important factors of the pupil's environment. Whatever action is essential ought to be taken by school authorities to insure physical and mental health as a fundamental characteristic of the teaching force of the public schools.

For this purpose skilled physical and health examinations furnish the essential data and should be required of all candidates for teachers' positions prior to their employment, and thereafter in whatever particulars may be essential to protect the schools against inefficient teaching due to lack of vitality and poor health of teachers on the one hand; and on the other hand, to exercise such hygienic supervision of school environment and curricula as may be essential to safeguard the teachers' occupation against unhygienic requirements and conditions of work; to act as an educational force in establishing such hygienic conditions and requirements of teachers as shall make possible the highest efficiency in the teachers' profession.

The health of the teaching body is an important aspect of educational hygiene and as such requires the effective carrying out of some reasonable and practicable course of procedure in regard both to the actual health of teachers and to the conditions and requirements of the teachers' work.

THE PLANNING AND MAINTENANCE OF SCHOOL BUILDINGS AND GROUNDS

The planning and maintenance of proper hygienic and physical conditions of school buildings and grounds is a work of which the main purposes and facts are well known, and one which in the past has been most markedly disregarded.

Reliable authorities, as a whole, agree in saying that there has been no place where all consideration of health has been so disregarded as in the construction of school buildings, churches, public halls and the buildings of the average college or university. A recent writer states (1909) the total value of all public school buildings of America is $700,000,000, but in point of fact one-half of them are so abominable that they should be torn down forthwith and a quarter more of them should be reconstructed. Recent school buildings are much better, and yet any number of faulty constructions are still going on. What is needed is yet a more vigorous educational campaign in what hygiene, sanitation and efficient living require. What is needed still more is:

1. The endorsement of certain standards and requirements in the planning and maintenance of school buildings and grounds by state and national educational and medical organizations.

2. The enactment of legislation which will define these standards and insure the erection and modification of school buildings in accordance therewith.

The committee submits the following as some of the essentials which ought to be incorporated in needed legislation. The "Ten Commandments of Schoolhouse Construction," by William E. Chancellor of Norwalk, Conn., are hereby abbreviated, modified and submitted as excellent:

1. Whenever possible, the school building should have sufficient ground and be so oriented on its plot that into every schoolroom the sunlight will come directly at least one hour each day.

2. Every schoolhouse, whether in city or in country, when over one story should be strictly fireproof.

3. Every schoolhouse should have at least two outer doors, for entrance and exit, with doors opening outward, and one outer door for every two rooms above four ground-floor rooms; and at least two stairways, with an additional stairway for every two rooms above four upper-story rooms, stairways not over 5 feet nor less than 4½ feet wide. In other words, the fireproof building should be as nearly panic-proof, also, as human ingenuity and material sources permit.

4. In every schoolhouse the halls should be well lighted from end to end.

5. The toilet conveniences, when possible to avoid it, should not be placed in basements; either isolated towers or separate buildings should be used.

6. Every child is entitled to at least 20 square feet of floor-space in each class-room attended, and to at least 300 cubic feet of air-space, to a complete change of air every eight minutes, and to playground space at least equal to class-room space. With artificial heating and ventilating systems the

problem is extremely difficult. Fresh air taken into the heating chamber should be taken from a height of 10 to 12 feet above ground. All air-ducts should be kept free from dust. The heated air should contain the proper amount of moisture. The air-ducts conveying the foul air from class-rooms should be of sufficient size and construction that the change of air is possible.

7. Unilateral or quadrant lighting has come to stay as the standard. With it has come the standard of not less than 20 or more than 25 square feet of floor space as the lighting area. The arrangement of this lighting is a technical problem not well met thus far.

8. Each class-room should have its own separate wardrobe.

9. Each class-room should have two or three sets of lockers for books so that day and evening pupils, or morning, afternoon and evening pupils, may use desks without interference with one another's property and without the resultant contamination and disease infection.

10. Hitherto, the notion has been to fit the school pupils into desks and chairs for book study. The new idea is to *give them space and opportunity for activity and development.* It follows that the school, instead of being the mold for the pupils to fit, must itself be molded by the course of study. The old unit idea of fifty children to a room and as many rooms of a standard size as there are classes of fifty children each is giving way to the idea of the universal school with such rooms as these also, viz.: (a) assembly and music halls; (b) physical training drill-rooms or gymnasiums; (c) drawing rooms; (d) offices and rooms for principal, head teachers, janitor, etc.; (e) science and art *museums*; (f) libraries and reading-rooms; (g) work rooms for manual training, trades, handcrafts and domestic science and art. In every instance in which desks are used in class-rooms, the desk should be adjusted to the child and not the child to the desk.

A BUREAU OF INVESTIGATION AND RESEARCH

Each department of educational hygiene should act, as far as practicable and consistent with the required established work, as a bureau of *investigation and research.*

The functions of departments of educational hygiene are *twofold:*

1. Carrying out certain established work of the schools.
2. Investigation and research of problems of health and development, of clinical psychology and of experimental pedagogy.

Luther Gulick gives the subject good and timely expression essentially as follows:

"Notwithstanding the great damage or degeneration that the vision of American school children is constantly undergoing, there are few school boards in *America* that have in their employ technical experts to decide on questions relating to eyesight. Schoolbooks are adopted but no standards have been established based on adequate research as to the length of lines for the various ages, size of type, size and shape of letter in connection with the lines; the width of the margins, the use of half-tones as compared with outline drawings, the use of dead-finished as compared with coated paper, and similar problems. There are authorities but no experts in the employ of departments of education who can speak authoritatively from the standpoint of special study made of these conditions as they exist in American schools.

"This extraordinary condition with reference to the problem of vision does *not* stand alone. Through the school we have changed the life of the child from one of predominant activity to one predominantly sedentary in character. During five hours of the school day for ten months in the year children are obliged to be seated for the major portion of the time. So extensive a readjustment of the life-habits of the young of a species has never before taken place. Its effect on digestion, circulation, nutrition and posture are as yet unknown. Yet there is not employed by any board of education in America one expert to make a special study of this group of problems centering about the changed conditions of life as they exist under the conduct of the modern school.

"We know that growth is more *fundamental* than education; that when educational demands are too severe, growth is interfered with; yet there is not a school in America that systematically weighs and measures its children to ascertain whether or not they are growing normally, and then readjusts the school tasks to fit this fundamental physiological condition.

"We know that nervous diseases among children are increasing. We believe that these disorders are related to the increased tension on the children. Many believe that this is due in part to the tasks imposed by school life, and yet there is not a board of education in America that is employing an expert to ascertain the facts with reference to these proble

When we add to these illustrations the problems conne with the physiologic and mental age of pupils, the standa ing of tests for the establishment of more reliable measu scales of growth and development essential before educa can become a real science, the need of technical skill of highest order stands out forcibly. Dr. Gulick well puts matter thus: "The need of skill and power within de ments of education to see that the fundamental conditio human life, health and growth, are properly conserved."

EXPERTS IN EDUCATIONAL HYGIENE

Two classes of *experts stand out as preeminently* qua for work in this special field of education:

1. The *psychologist-educator. An expert in* child hyg in educational and clinical psychology and in practical ex mental pedagogy; skilled in physical and mental diagnosi normal and abnormal growth and development and havi knowledge of elementary medicine; a thoroughly tra broad-gauged expert in education.

2. The skilled physician who has had sufficient training *acquaintance with educational* work.

ACCESSORY AND ESSENTIAL IN THE FIELD OF EDUCATION HYGIENE

Accessory and essential in the field of educational hy are the following:

1. The establishment of medical and dental clinics pupils whose parents are financially unable to pay the tomary fees for medical and dental services is essentia efficiency in such phases of this work as *pertains to esse* medical and dental aid. Cities and counties throughout United States abound in large numbers of homes in w parents are unable to meet customary fees, but many can partial fees. The embarrassment concerned with making kn financial need by parents and many other difficulties make establishment of medical and dental clinics a marked neces

Clinics of this order have been and are being establis and the results are essentially valuable, since they giv tangible meaning to the work where the need is most evid Both parents and teachers appreciate this tangible result. further development of the whole field of work therea becomes easier.

2. The cooperation with city, county and state health offi in the problems of public health as they stand *out in* schools.

The care of contagious and infectious diseases and rel problems of public health as a matter of expediency efficiency should be controlled and directed by boards health.

This is the older and more crystallized form of med inspection of schools and is admirably carried forward many of the best cities of the nation. The scope of this p does *not permit* its further discussion.

A RECOMMENDATION

The educational progress of the future is largely conditioned by the right solution of the problems of educational hygiene. No field of educational endeavor is more beset by *perplexities* and problems.

Your *committee*, therefore, joins in a recommendation already made by Dr. Terman of the Department of Education of Leland Stanford University, essentially as follows: That steps be taken to bring about a conference of representatives from the United States Department of Education, the National Educational Association, the American *Medical Association*, the American Institute of Homeopathy and other national medical associations and the Russell Sage Foundation for Child Welfare, which committee, after joint consideration of the problems involved, shall formulate and recommend alternative systems of educational hygiene which in time would be accepted as standard requirements in this special field of education.

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REPORT ON METHODS OF SCHOOL VENTILATION BY THE CHICAGO COMMISSION ON VENTILATION *

In the publication called "Open-Air Crusaders," information is given as to three types of schools—open-air schools, cold-room schools and ordinary schools. It is well to bear in mind that these are three different types and that they are suited to three different types of children.

OPEN-AIR SCHOOLS

The open-air school is expensive to maintain. It is unnecessary except for a small group of children. Its field is the clinically tuberculous children, the distinctly subnormal children from a tuberculous environment, and a certain small percentage of distinctly subnormal children from non-tuberculous homes. It might be argued that children of this class are better off if they are not in school at all. There is an occasional child of whom this is true, but it is not true of the great mass of children of this group. The years of school are immensely valuable from both a pedagogic and a physical standpoint. The child should have an education if it can be had without physical prejudice. But these children are very much better off in a physical sense in the proper physical environment of *open-air schools*, under the proper control of such schools, learning the lessons of right living, than they would be at home; and, finally, the educational value of such schools to the family and to the neighborhood is to be taken into account. These are the things which make open-air schools worth while, even though the number of children taught in them is small. Open-air schools require extra clothing; extra food, sleeping or quiet rest periods, medical supervision and individual instruction. In such schools there is shielding against wind, snow and rain. Otherwise, the weather conditions are about as they are in the open. "Open-Air Crusaders" gives instructions in dressing and feeding the children in such schools.

COLD-ROOM SCHOOLS

Cold-room schools are probably slightly more expensive to maintain than ordinary schools, but the difference is nominal. Their field is caring for a group of children who are more nearly normal than the group properly cared for in open-air schools. In them there should be no children with open tuberculosis or in the contagious stage of any other infection. However, they should take care of the great majority of children who have subinfections and latent infections, but which are not contagious. The field of cold-room schools includes the following groups of children:

Pale anemic children, flabby children; children with enlarged neck glands and tonsils, adenoids, children who are mouth-breathers, children with frequent headaches, all children who catch cold easily, children who contract contagion easily, and all children who fail to make grade.

This means that there should be a cold room in every school except in the very congested parts of a great city where schools are very close together. In such places the cold-room children from three or four schools can be sent to one school and half or all of that school can be operated on the cold-room basis.

In cold-room schools the windows should be thrown wide open; a few screens for diverting the air can be used to advantage. The temperature of such rooms should be around 55 F. It should not go higher than 60 F. on days when artificial heating is maintained. It should not go lower than 50 F. Effort should be made to keep it at 55 F., as shown by thermometers so placed that they will show the temperature of the occupied part of the rooms and not that of dead spaces or walls.

Children taught in such rooms do not need to have clothing or food furnished them. They are comfortable in street wraps and gloves, such as they get at home. The usual desk arrangement of ordinary class rooms is not adapted to cold school-rooms. The proper arrangement is one which lends itself to a good deal of moving around by the pupils. Such pupils need, say, 10 per cent. more than the usual amount of medical supervision. The service of the teacher is at least 10 per cent. more individual.

Only a few of the children who come to the cold-room schools would be better off if kept out of school. In the cold-room school group belong most of the children who by reason of poor physical condition are now kept out of school for fractions of school years by their parents. Almost everyone of these children would be better off in such a school with its good hygiene, good control and educational opportunity than he would be in his home. And, in addition, the educational influence of such schools on the students, the families and the neighbors is magnificent.

For the authorities to furnish food and clothes in such schools is a mistake. Their great value lies in driving home the idea that this large group of children can be inexpensively cared for; that curative methods are right at hand; that they are inexpensive and that they may easily be applied.

ORDINARY SCHOOLS

But very much the most important group of children is that comprised of just the ordinary children who are taught in the ordinary schoolrooms. They are the most important because they constitute much the largest group. How can we get better ventilation for them? Air-borne infections are numerous in spite of the present tendency to doubt the existence of certain of them. We still have air-borne infections, especially when we include subinfections and latent infections. There are the air-caused conditions, such as frequent headaches, pallor, muscular flabbiness, enlarged glands, tonsils and adenoids, and increased susceptibility to colds and infections with the usually described contagions.

The agencies causing harm in air in the order of their importance are: (1) bacteria, (2) improper temperature, (3) low humidity, (4) lack of air movement, (5) dust, (6) carbon dioxid, (7) carbon monoxid, (8) other agencies.

The measures necessary to prevent harm being done by these agencies are as follows:

1. Bacteria.—To exclude from the schoolroom all carriers of infection.

A. All cases of typical, atypical and carriers of diphtheria and typhoid fever.
B. All cases of typical and atypical scarlet fever, measles and whooping-cough.
C. All open cases of tuberculosis.
D. All unvaccinated children.
E. All children with colds.
F. All special contagions under special circumstances.

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* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

2. *Temperature.*—The temperature of the schoolroom should not go above 68 F. during the days when the rooms are artificially heated.

A. There should be a thermometer in every schoolroom.

B. It should be placed about 4 feet above the floor. It should be attached to an inside wall in such a way that it is insulated therefrom.

C. An hourly record of the schoolroom temperature should be a part of the school routine. Such a record should go to the governing authority. If there is much difference between the temperature in different parts of the room this should be of record.

D. The temperature of the schoolroom should be 60 F. when the students come in from play. It should reach 68 F. within twenty minutes after the children are in their seats. If at any time it goes above 72 F., the children should be dismissed from the room.

E. When the children are at play the windows should be thrown wide open and the room aired.

3. *Humidity.*—The humidity of artificially heated rooms is always too low unless special humidifying provisions are made. Artificially dried air predisposes toward infections by drying up the membranes of the respiratory passages. It especially predisposes toward subinfections and latent infections.

A. The air of a schoolroom should have a relative humidity above 40 and as near 70 as possible.

B. Window sweating and frosting softens the light in the room and releases some heat. It is therefore an advantage rather than a disadvantage.

C. Wall sweating does no harm except where it harms the wall: therefore it may or may not be objectionable.

4. *Air Movement.*—Air which is too still does harm because the air in the aerial envelope gets too hot and too foul. The same is true in a lesser measure of the air in the breathing zone. Such air being in contact with the body or just from within it, is the hottest, foulest air in the room. There is no comfort or well-being unless this air is displaced promptly. Appreciable currents are needed for its displacement. Where there is no air movement, the aerial envelope will overheat. The necessity, then, is for appreciable air currents. These are needed in cold weather, just as they are in warm weather. Diffusion currents do not suffice.

5. *Dust.*—Dust does harm by assisting in infections, subinfections and latent infections. Schoolroom air is generally not very dirty. Measures for its betterment are as follows:

A. Control of blackboard dust.

B. Control of cleaning methods.

6. *Carbon Dioxid; 7. Carbon Monoxid; 8. Other Agencies.*—These slightly harmful agents are well cared for under the use of prevailing measures.

METHODS OF VENTILATING SCHOOLS

There are few ventilating problems which are so difficult as those of the schoolroom. The children come from many sources. Therefore they bring in many varieties of bacterial life. The pupils while at work are inactive physically, therefore they generate but little heat and their feet get cold easily. They are fixed in their occupation of every part of the room. Those who are near the outside windows must stay there. Those who are near the inside wall must stay there. Therefore there is the maximum need for a uniformity of heat and air distribution. The pupils are highly susceptible to infection. Their bodies are highly impressionable. Here is a combination the difficulties of which are hard to duplicate.

The difficulties are almost wholly connected with the necessity for heating. In warm weather ample air movement is had through open windows. On very dusty days wiping the desks with a moist cloth is easily done and removes the only objection to window ventilation. In cold weather, and especially in cold weather in a very severe climate, the difficulties appear.

If the school is heated by stoves the result will be disastrous unless special provision is made for fresh air and its conditioning. The best outlet is through the fire itself. If it be argued that there is no ventilation of the upper 4 feet of air in such rooms, it can be answered that such unoccupied space does not need to be ventilated. But an arrangement providing for all the air outgo through the stove would furnish too much heat and at the same time be inelastic and sometimes inadequate. Supplementary outlets should be provided around the stovepipe, thus getting the benefit of the indirect draft at that point.

Where feasible some of the inlets should be through floor-ducts opening under the stove. Windows used as accessory inlets should have deflectors extending the width of the sash. The bottom of the deflector space, the window-sill and the window-sash should have an outward, downward slant to facilitate the removal of cinders and dirt and so that water may drain out. If the school is heated by steam or hot water, the air preferably should be heated by indirect radiators in the basement and introduced through flues. Where this is impracticable air may be introduced through direct radiators supplied from openings in the outside walls. Such radiators are called direct-indirect radiators, and in practice it has been found necessary to have enough plain direct radiators to heat each room independently of those used to warm the air-supply. Eduction flues must be provided, and these should have both floor and ceiling openings, the latter for use in most effective ventilating and cooling; but these must be provided with closing devices and must generally be closed when heating the rooms.

Where the rooms are heated and ventilated by a warm-air system, the inlets should be about 8 feet above the floor, and the outlets near the floor line on an inside wall. Such installations will not be satisfactory without some accessories for stirring the air. Electric fans, where there is an electric current, will convert a bad installation with a still, morgue-lik air into one which is satisfactory. No system which make use of diffusion currents alone is satisfactory, even wher 2,000 to 3,000 cubic feet of air per hour per occupant are furnished. When the temperature is kept down, the humidity kep up, and currents are always perceptible, the quantity of ai supplied need not exceed 1,000 cubic feet per occupant pe hour. In very exceptionable installations where there is littl waste space and the air can be kept moving actively, as, fo example, in street-cars, the Chicago ordinances require les than 500 cubic feet per hour per occupant. Where there i no electric current and fans cannot be used, we know of n way to create perceptible currents except through windows Such openings must be covered by deflectors. The air whic is to be heated should never be brought in contact with iro hot enough to char the dust and make the air smell burnt.

TO INCREASE HUMIDITY

Where heating is done by stoves, pans of water on the stov and in other places around the room help to increase th humidity. If the heating is done by steam radiation, bucket and pans can be hung on these, but the greatest good wil come from allowing steam to escape into the room from th radiators. If the heating and ventilating is done by a hot-ai system, jets of steam should play into the intake ducts.

The heat required for the evaporation of water to bring th relative humidity up will be compensated for by the lowe temperatures which can be maintained in the schoolroom.

TO DECREASE DUST

Blackboard dust may be kept down by using erasers which are very slightly moistened.

Floor dust may be obviated by (a) vacuum cleaning, (b) sweeping at proper times, (c) sprinkling or sawdust preliminary to sweeping, (d) moist dusting, (e) making the students wipe their feet.

SUMMARY OF RECOMMENDATIONS

1. Schoolrooms should not be heated to a point above 68 F.

2. The thermometer should be located about 5 feet from the floor on an inside wall not closer than 6 feet to an air outlet.

3. The thermometer should either be suspended, or so attached to the wall that it will record the temperature of the air (and not that of the wall).

4. The temperature of the schoolroom should be 60 F. as the pupils enter the room after they have been taking exercise, and it should reach 68 F. within twenty minutes. The temperature of the schoolroom should be recorded each hour and this record should be sent to the proper authority.

5. The air in the room should be kept actively in motion. A sense of stillness is always to be avoided. Electric fans for this purpose are advised.

6. During all recess periods the windows should be opened wide and the rooms "blown out."

7. The air inside should not be drier than that outside.

8. The air inside should have 50 per cent. to 70 per cent. relative humidity and the outside walls should be built with air spaces or other insulation so as to make it possible to reach this humidity before wall-sweating begins.

9. Window-sweating, so far from being a disadvantage, is a distinct advantage, in that it softens the light.

10. Dust should be kept down in the schoolroom by using blackboard erasers which are faintly moist; by vacuum-cleaning, or by opportune and proper sweeping.

11. With proper wall insulation very little heat is required for a schoolroom even on days of zero weather.

12. All windows used for continuous air-supply should be provided with deflectors, preferably of glass, placed at their bottoms. These should extend the width of the sash and be so arranged as to deflect the air upward when the windows are open.

13. In buildings equipped with ventilating systems when the windows are raised to flush out the rooms, all rooms should be flushed simultaneously, in order to interfere as little as possible with the proper operation of the ventilating system.

14. In climates where the air must be heated before it is discharged into the room the simplest procedure is to take this air in through indirect radiation.

15. So far as we know, the best results are obtained by forcing the air through the indirect radiation by means of fans, delivering it upward in each room through a multiplicity of openings in the floor and removing it at the ceiling.

16. Where fans are not used the inlet to the rooms is best placed near the ceiling, with a foul-air outlet at the floor for use when heating the room and a foul-air outlet at the ceiling for use when ventilating or cooling the room, the latter opening to have a device whereby it may be closed at will.

17. The method of ventilation known as direct-indirect, in which the cold air enters through openings in the walls of each room and passes through radiators, is effective only when outside conditions are ideal and the use of this system except as a makeshift is deprecated.

18. Where schoolrooms are heated by stoves some of the air should be taken into the rooms through windows provided with deflectors. Some of it should enter through a duct in the floor and discharge around the stove.

19. Where steam is available steam jets should be employed to humidify. Where steam is not available, pans of water on the radiators, kettles on the stove, containers filled with water or other moistening devices should be used around the room. These should be abundant. The usual small pan is not adequate.

20. People with the following diseases, either through contact or infection of the air, are capable of doing harm and should be excluded from the room: small-pox, measles, scarlet fever, diphtheria, whooping-cough, chicken-pox, poliomyelitis, cerebrospinal meningitis, influenza, colds, coughs, tuberculosis, typhoid fever, trachoma, itch, lice, and some others of no consequence in Chicago.

21. Where schools are ventilated by unsatisfactory methods great improvement can be effected if to them the following additions are made:

1. If fans or other forms of agitators are installed.
2. If humidifiers are installed.
3. If the temperature is kept at 68 F. or below.
4. If the windows are raised and the air blown out at least three times a day.

22. Open-air schools are schools for tuberculous or other definitely subnormal children. In them the temperature and humidity is that of the open air. The only change from the straight open air is that there is some shielding from the wind, rain and snow. The children in such schools require special food, special clothing and special rest hours.

23. Cold-room schools are those in which there is some shielding against cold, wind, rain and snow. The temperature should be 55 to 60 F. and the relative humidity around 70. Such rooms are for children who have enlarged glands, adenoids or are pale, anemic, headachy — in a phrase, children who are moderately below par. Such children wear their own wraps during school hours. They do not need school feeding or nourishment more than other children require. They do not need an hour for sleep.

The Chicago Commission on Ventilation:

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Chicago Department of Health.
Prof. J. W. Shepherd,
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George Mehring,
W. L. Bronaugh,
S. R. Lewis,
Illinois Chapter, American Society of Heating and Ventilating Engineers.

A RAPID METHOD OF INOCULATION AGAINST TYPHOID FEVER

METHOD OF ADMINISTRATION OF VACCINE IN SOME 3,500 INJECTIONS IN THE EIGHTEENTH UNITED STATES INFANTRY, MANEUVER DIVISION SAN ANTONIO, TEX.

KENT NELSON, M. D.
Major, Medical Corps, U. S. Army
AND
W. E. HALL, M.D.
First Lieutenant, Medical Reserve Corps, U. S. Army
SAN ANTONIO, TEX.

Our experience covers the administration of the vaccine in 3,500 separate injections and we feel that this number is sufficiently large to justify confidence in our method. In the administration of the vaccine there are several essentials which are of the greatest importance, as follows:

1. It must always be clearly borne in mind that this vaccine is a bacterial suspension and not a solution, for on a thorough understanding of this one point will rest much of the success or disaster attending its administration.

2. The necessity of cleanliness in its administration is imperative.

Soon after the regiment arrived in San Antonio an order was issued making it obligatory to all (officers, enlisted men and civilian employees attached to the regiment) to submit to the inoculation.

The regiment was in camp under service conditions as far as supplies and equipment were concerned. The medical department had only the equipment necessary for a regimental infirmary for the administration of first aid. This infirmary is in no sense a hospital and sick are never retained in it, always being transferred to the field hospitals. With this meager medical equipment four problems confronted us:

1. The administration of the vaccine in a cleanly manner so as to insure against infection and subsequent admission to sick report.

2. The protection of the individuals, one against the other, by not using the same needle twice without reliable sterilization.

3. The equalization of the reactions by administering uniform and accurate doses of the vaccine.

4. Inoculation of the command with the maximum degree of rapidity.

EQUIPMENT, PERSONNEL AND TECHNIC

In this regiment the equipment and personnel used for the rapid inoculation of a large body of men was as follows:

Equipment.—One alcohol stove with a shallow pan of about 1 quart capacity. Two hypodermic syringes of a make which permits sterilization by boiling, with six sharp needles for each. One bottle each of tincture of iodin and collodion with camel's hair brushes. Two boiled medicine glasses, some clean towels and a small quantity of sterilized gauze.

Personnel.—Two medical officers: one sergeant, hospital corps, in charge of the individual record of the inoculation; one private, hospital corps, to apply iodin to the arms; one private, hospital corps, to apply collodion to the needle punctures; one private, hospital corps, in charge of the stove with constantly boiling water.

A box or something suitable for use as a table is covered with clean towels and on these are placed a few pieces of sterilized gauze to receive the sterilized syringes and needles and the sterile medicine glasses containing the vaccine.

The inoculator immerses the needle in the vaccine in the medicine glass; after filling the syringe he stirs the vaccine by discharging the syringe into the glass; this is done several times and should be repeated at frequent intervals throughout the inoculation because of the fact that, the vaccine being a suspension and not a solution, precipitation of the bacilli will occur and dosage (as far as numbers of the bacilli administered) would not be uniform.

So far as the inoculation is concerned, it is immaterial whether or not the subject has had a bath the same day or a week before.

On arrival at the infirmary the men are directed to roll their sleeves well up to their shoulders. An assistant with iodin then paints an area about 15 mm. in diameter at the insertion of the deltoid muscle. This completed, the man steps forward to the physician, who is ready with a syringe with sterile needle attached and filled with well-mixed vaccine. The needle is plunged into the skin through the iodin-painted area, the proper quantity of vaccine is discharged and the needle withdrawn, when the man passes to the assistant who applies collodion to the needle puncture, thus sealing the wound at once. The man is directed not to roll his sleeve down until the collodion has hardened when the operation is complete.

After an injection has been given, the inoculator detaches the needle used and it is transferred to the boiling water by the assistant in charge of the stove, who returns a clean needle from the boiling water to the inoculator. The needles are withdrawn from the water in the order of their entrance. This arrangement and the number of needles used permits one needle to be in use and five needles to be constantly boiling.

In this regiment and with this method, by which each man has a freshly boiled needle and a sterile hypodermic (which, by the way, is reboiled once every hour), we have been able to vaccinate men at the rate of 300 inoculations per hour. The efficiency of our cleanliness and the accuracy of our dosage has been demonstrated by our results which we now enumerate.

1. In this series of 3,500 injections of the vaccine we have not had a single case in which the temperature rose to 102 F.

2. No infection of any character has been observed, not even a suspicion of such an accident.

And last but not least, there has not been any evidence of any ill effect of any nature whatever which, in our opinion, can be traced to the vaccine.

These results we attribute, of course, to the accurate preparation of the vaccine and also to our method of administration, in which the iodin, careful sterilizatio of instruments, and most careful mixing of the vaccin in each syringe dose given were used.

Care must be observed to give the vaccine subcutaneously and not intravenously, as happened in one case which was noted by us, but did not occur in our re ment. In this case of intravenous inoculation the pu ture was not made at the insertion of the deltoid mus but well down on the anterior aspect of the arm.

In this case the reaction was extreme, temperat high, diarrhea, malaise and herpes labialis were mark and prostration existed for three days. At the site puncture absolutely no local reaction was noted, even redness—and the reaction commenced almost i mediately after the inoculation—significant evide that the vaccine entered intravenously.

STAGES AND DEGREES OF REACTIONS

In this series of inoculations, not a single case reac a temperature of 102 F. and in not a case did the r tion exist longer than twenty-four hours; in the majority the reaction was over in twelve hours. reactions are considered under the heads of local general.

LOCAL REACTIONS

Frequency.—As a rule the local reactions were n numerous after the first dose, less so after the sec dose and of least frequency of occurrence after third dose.

Character.—To us a typical reaction consists of acutely inflamed area surrounding the point of inoc tion. The size of this area may vary from 1½ to 4 inches in diameter. It does not look like an absc It is hard and indurated and has considerable l temperature, the entire arm may ache more or less the axillary glands are somewhat tender.

Time.—The height of this reaction is reached wit eight or ten hours and by the end of twenty-four ho although the area around the point of inoculation still red, it has ceased to be painful and the pati ignores its existence. In our opinion, a local react extending over a period of time greater than twen four hours is caused by some other agent than vaccine.

GENERAL REACTION

Frequency.—In this series of inoculations a syste reaction was noted in about 7 per cent., and was m frequent after the second dose, next after the first a of least frequency after the third dose. It consisted a temperature of about 100 F. and malaise; these w consistent and, in exceptional cases, diarrhea, insom and nervous symptoms, herpes labialis and, most r of all, an acute general erythema with an occasional s not unlike a "rose spot."

The other symptoms noted are irregular in charac and vary in duration. Insomnia and nervous sympto may last for forty-eight hours, but as a rule are o within twenty-four hours.

In this regiment provision was made for these re tions by excusing the men treated from all duty f twenty-four hours after inoculation and instructi them to avoid alcoholic drinks, muscular exertion a exposure to the sun, for it is our belief that failure observe these precautions after inoculation will, in large percentage of cases, result in a sharp reacti which can be prevented by strict observance of the instructions.

During this encampment at San Antonio, Texas, of 12,000 men approximately, there has occurred one case of typhoid fever. This man was a civilian teamster and had never been inoculated against typhoid.

With this case of typhoid and the undoubted presence of typhoid carriers in this command, it is our opinion that sanitation alone would never have kept this command free from an epidemic of typhoid fever, and that its present typhoid-free condition has been brought about by the energetic employment of vaccine prophylaxis against typhoid. From a sanitary standpoint, the health record of the present encampment of the United States troops at San Antonio, Texas, has probably never been equaled.

Note.—Since this article was written there has occurred in this division an additional case of typhoid fever. This case was in the person of a private of the hospital corps and was of the ambulatory type. This man had had two doses of the vaccine, which so modified the disease that clinically it would not have been recognized, the symptoms consisting only of a little fever and malaise, which lasted for a few days. This additional case and the case previously reported in this paper are cited for the purpose of emphasizing the fact that typhoid fever is present in this camp.

IDIOPATHIC NON-PURULENT ACUTE THYROIDITIS

REPORT OF A CASE, WITH COMPLETE RECOVERY *

HOWARD V. DUTROW, M.D.
ANCON, CANAL ZONE

This case was presented at the sixty-second meeting of the Canal Zone Medical Association, on account of the rarity of this diseased condition of the thyroid gland, at least on the Isthmus, this being the only case diagnosed as such among the records of Ancon Hospital.

History.—The patient was a male laborer; from St. Lucia, aged 30, seven years on the Isthmus, and in fairly well-nourished condition. His father was still living and healthy; his mother had died of senile debility. The patient had never been admitted to the hospital before. He had had rheumatism from time to time; but no attacks of shortness of breath, nor history of previous illness of any kind. His venereal history was negative. Ten days before admission to the hospital, the patient's throat began to swell; two days after the initial onset, the swelling in the region of the thyroid gland became painful.

Examination.—When the patient was admitted, the swelling was not acutely painful to pressure but became so two days later. The mass conformed to the movements of the larynx and adjacent structures during the act of deglutition. There was no dysphagia or dyspnea. There was no pain on firm pressure over the manubrium of the sternum. The swelling gradually increased and a small area of bogginess could be made out on palpation in the median line on a level with the cricoid cartilage. The eyes were negative and the heart's action was slightly accelerated. The temperature was 102 on admission; on the morning of the following day it was 99 and in the evening went up to 101½. For the next ten days it ranged from 100 to 101½, then it dropped to normal and remained so until the date of the patient's discharge. The buccal cavity and pharynx were found to be negative. Laryngoscopic examination of the larynx showed nothing except a slight congestion of the mucous membrane. There was no impairment of the voice. The patient had a leukocytosis of 12,000; chemical and microscopic examinations of the urine were negative. The condition of the blood was not ascertained in this case. A differential diagnosis has to be made between Ludwig's angina, cervical adenitis, mediastinal, peritracheal and periesophageal abscess.

Operation and Treatment.—An exploratory incision was made in the median line over the isthmus of the gland and both lobes explored for the presence of pus but none was found. A small amount of colloid material mixed with blood exuded. A small gauze drain was inserted which was removed after forty-eight hours and the wound allowed to close. Ice in an ice-cap was used constantly as a local application, while the constitutional treatment consisted of brisk purgation together with tonics and a full nutritious diet.

Course.—The swelling gradually subsided and the patient made a complete recovery, except for a slight discoloration of the skin over the gland. Whether he will have any subsequent local or general manifestations as a result of the acute inflammatory process in the gland, I am not prepared to say. He had no signs of myxedema when he left the hospital.

Acute thyroiditis may be purulent or non-purulent. When pus is present it is usually in the form of small abscesses scattered throughout the gland. In this case, no apparent cause could be found, either local or constitutional. The etiology of this form of acute thyroiditis is in most cases a mooted question as is the physiology of the gland itself.

I have reported this case because I thought it would be of general interest to the profession, as well as to those who are engaged in special work pertaining to the thyroid gland and its allied pathologic conditions.

AN UNUSUAL FOREIGN BODY IN THE INTESTINE

EDWARD H. MOSS, M.D.
CINCINNATI

The following interesting case is reported, not only as a curiosity, but also as showing to what an extent the human digestive tract can accommodate itself to a large foreign body for so long a time.

In November, 1910, Mrs. H., aged 27, was placed in a private sanatorium, suffering with acute mania, in which she was very destructive, tearing up everything within her reach. The patient afterward told me that the nurse tied her feet with a small piece of rope and that she chewed through it and swallowed it so that the nurse would not know what she did with the rope. She also chewed her gown, bed sheeting and hair and swallowed them.

She left the institution in December, 1910, cured, and did not suffer any inconvenience, having a bowel movement daily, although she states that at times she had a little pain in the pit of the stomach.

Sept. 13, 1911, she came under my care for a gastro-intestinal disturbance following the eating of canned lobster, in which she vomited every few minutes matter consisting mostly of water and a little bile. The temperature was 100, pulse 96. Examination of the abdomen revealed nothing abnormal.

September 14 the vomiting still continued and the bowels were very much distended with gas. The temperature was normal and pulse 86. Examination showed no evidence of appendicitis. I directed the administration of a high enema of soapsuds and turpentine which was repeated an hour later. After the second enema the patient evacuated a small, clay-colored, watery stool with a good deal of gas.

September 15 patient had ceased vomiting and taken some light nourishment. As her bowels had not moved, her stomach being settled, I gave her four drops of croton oil in milk, and ordered the nurse to give a high enema within two hours if the bowels did not move. Following the enema the patient had a copious, watery stool, blackish in color and very foul. On the 16th and 17th the patient was comfortable and ate light diet; the pulse and temperature were normal and she was up and around.

September 18 at 9 o'clock she commenced to vomit again and complained of "awful bearing-down pains." Her bowels were moved by a high enema of Epsom salts (stool very loose, black and foul). She complained of intense pain all day.

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* From the Eye, Ear, Nose and Throat Department, Ancon Hospital. This case is reported with the approval of Colonel W. C. Gorgas, Chief Sanitary Officer.

September 19, about 11:30, after the nurse had given a high enema of Epsom salts, the patient started to use the vessel, when she screamed out with pain and told the nurse that something was cutting her rectum. The nurse reached down and found a piece of rag protruding from the rectum, on which she started to pull, and a mass came down into her hand. She put her fingers up into the rectum and felt another mass which was connected with the first. She started to pull this mass and the patient fainted. The nurse pulled the rest out and placed the patient in bed, and then called me. On my arrival we examined the mass and found that the specimen, filled with fecal matter, weighed 2 pounds and 8 ounces. After washing, the mass was found to consist of hair, rope and cloth which the patient had swallowed during her maniacal attack nearly a year before.

I have looked up a good deal of literature on this subject but can find no record of any case in which the patient retained so large a mass in the intestines for so long a time and then passed it per rectum. There are instances in which obstruction has occurred from foreign bodies in the intestines necessitating operation.

18 West Seventh Avenue.

WOODY PHLEGMON OF RECLUS

E. J. PANZNER, M.D.
DETROIT

The patient was a woman, aged 25, in good general health, who had been married two years and had no children. Past history was negative, except for a number of attacks of follicular tonsillitis. Two days following an attack of pharyngitis she noticed a swelling develop in the cervical region of her neck. This swelling became larger and gradually extended up the left side of the neck, just posterior to the mastoid process, whence it traveled anteriorly to the submaxillary space and forward almost to the trachea. The mass was very hard and, except for a very small area which was soft and fluctuating, had a board-like feeling on palpation. The skin was not discolored at this time, nor was it adherent to the lump beneath. There was no pain, no rise in temperature, no dyspnea, in fact nothing, either subjective or objective, except the swelling referred to. I saw the patient one month later and the same condition prevailed. This time an aspirating needle was introduced into the necrotic focus, but no pus escaped. The Von Pirquet test was tried for tuberculosis but proved negative. Actinomycosis and sarcoma of the skin were excluded. A diagnosis of woody phlegmon or *Holz-Phlegmon* (as it is known in Germany) was made. The board-like mass was deeply incised, and a small quantity of pus escaped. A drainage-tube was introduced and retained for two weeks, but pus discharged slightly. This condition prevailed for four months, during which time the mass became smaller and softer, the skin bluish, and pus discharged in a small amount from several sinuses, whereupon recovery became uneventful.

The literature of this disease is very meager. Reclus was the first one to report this peculiar condition in 1893, and since then a number of similar cases have been put on record. Recently, Powers of Denver reported a number of cases.[1]

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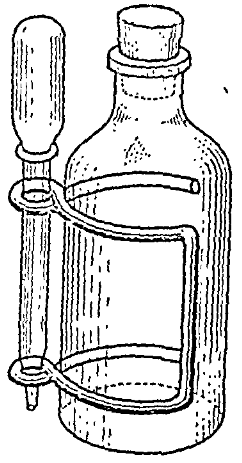
1. Powers, Charles A.: Woody Phlegmon of the Neck (Reclus), The Journal A. M. A., July 1, 1911, p. 365.

Credulity.—"In fact, we are all credulous on subjects of which we have no actual knowledge. . . . A young physician, or surgeon, on the point of commencing practice, having read in a medical journal a statement of a wonderful cure produced by some new medicine, may not doubt it to be true; while a more experienced practitioner will say, 'It may be so; but, according to my observation, in nine cases out of ten such stories prove to be without foundation.' "—Sir Benjamin Collins Brodie, 1842.

A NEW MEDICINE-DROPPER CLIP

PERCY R. WOOD, M.D.
MARSHALLTOWN, IA.

My first medicine-dropper clip did not prove satisfactory. The pipettes on the market vary so widely in caliber that they will not fit any single loop of standard size. When the pipette is too small the tip rests on the table, exposed to infection and displacement; when too large it cannot be inserted into the loop or removed without undue effort. Moreover, the single clip does not cling securely to the vial, besides being too difficult and expensive to manufacture.



A new medicine-dropper clip.

I have now contrived a clip, illustrated herewith, which overcomes these objections. It can be made by any one with the aid of a bit of wire and a pair of pincers, and will fit a bottle of any size. There are two loops, the top one sufficiently large to engage loosely a pipette of any size, while the lower one engages and supports the tip. The pipette can be easily removed and replaced.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. ITS ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON *INVESTIGATION MADE BY OR* UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

FERMENTDIAGNOSTICUM.—Solution of Glycyltryptophan, Kalle.—Fermentdiagnosticum is a specially prepared solution of glycyltryptophan for use in determining the presence of a peptolytic ferment.

Actions and Uses.—Glycyltryptophan is decomposed in the presence of certain ferments into tryptophan and glycocoll (amino-acetic acid). The presence of tryptophan is determined by the characteristic test for that substance. If tryptophan is found in the solution after incubation with a suspected solution (stomach contents) it is concluded that a peptolytic ferment was present in the substance tested.

As peptolytic ferments are not present in stomach contents except after regurgitation from the intestine, or in the presence of cancer, it is claimed that fermentdiagnosticum may be applied as a reliable test for the diagnosis of cancer in the stomach.

Dosage.—Each bottle contains a quantity sufficient for one reaction, the solution being covered with toluene for preservation. The material to be tested should be examined for bile and blood and tested with bromine water or bromine fumes for the presence of tryptophan. If these tests give negative results, the stomach fluid is suitable for the application of the fermentdiagnosticum.

The bottle is filled to the mark with filtered stomach contents and placed in the incubator for twenty-four hours. It is then taken out and 2 to 3 c.c. of the solution underneath the toluene layer are removed and tested for the presence of tryptophan.

Manufactured by Kalle & Co., Biebrich a. Rh., Germany (Kalle & Co., Inc., New York). German trademark; no U. S. patent or trademark.

Therapeutics

ANESTHESIA AND ANESTHETICS

(*Continued from page 1697*)

CHLOROFORMUM U. S. P.

Description.—Chloroform, $CHCl_3$, is a heavy, clear, colorless liquid, with a sweetish characteristic odor and taste, slightly soluble in water, but mixes in all proportions with alcohol and ether. It is a very remarkable solvent; is very volatile; and its vapor is heavier than air. In the presence of light and air it undergoes slow decomposition with the production of irritating substances, and consequently it should be kept in tightly stoppered bottles.

Chloroform was discovered in 1831, by Samuel Guthrie, of Sacketts Harbor, N. Y., and about the same time by Soubeiran, in France, and Liebig, in Germany also.

It was employed as an anesthetic by Sir James Y. Simpson, of Edinburgh, on Nov. 4, 1847, and soon afterwards he published a report of fifty successful administrations. Its apparent advantages over ether caused it for a while to supplant the latter in a large part of the world, New England being the most important exception.

Local Action.—On the skin its action is similar to ether though more intense, and vesication is more easily produced.

Systemic Action.—Internally its action is similar to that of ether with the following slight differences: It is less depressant to the respiratory center, and it does not increase the arterial tension, as it is not a stimulant to the heart. On the contrary, it has a direct depressant action on the heart muscle.

Therapy.—Its principal use is by inhalation for surgical anesthesia. Locally it is used as a counter-irritant, and as such is an ingredient of several liniments. Chloroform has been used as a styptic, and a 2 per cent. solution in sterile water has been found efficient where the bleeding vessels were small.

Internally it acts as a carminative similar to the volatile oils. Chloroform inhalations to the point of anesthesia, lasting a few minutes, has been found to greatly modify subsequent paroxysms in whooping-cough. Whether its antiseptic property is the reason for such improvement, or whether the irritability of the nervous system is for some time reduced, has not been determined. If a patient with whooping-cough had paroxysms that were dangerous for the welfare of his blood-vessels and heart, certainly chloroform should be resorted to. On the other hand, it should not be forgotten that a patient must remain quiet for some hours after chloroform anesthesia. As a routine treatment, therefore, chloroform should not be used, probably, in whooping-cough.

Official Preparations.—*Aqua chloroformi*, chloroform water. Dose 15 c.c. (or ½ ounce), a tablespoonful in cracked ice. This is sometimes used as a menstruum.

Linimentum chloroformi, chloroform liniment, chloroform 30 per cent., soap liniment 70 per cent.

Emulsum chloroformi, emulsion of chloroform, chloroform 4, expressed oil of almond 6, tragacanth 1, water to 100. Dose, 10 c.c. (or 2 fluidrams), 2 teaspoonfuls.

Spiritus chloroformi, spirit of chloroform (chloric ether), chloroform 6, alcohol 94. (strength 6 per cent.). Dose, 2 c.c., or 30 minims.

CHLOROFORM NARCOSIS

Chloroform has been extensively used as an anesthetic, in Scotland, where it was first used by Simpson, in England, Ireland and throughout Europe. It has maintained its popularity with very many experienced surgeons in spite of the fact that it has been accused of having produced many more deaths than are produced by ether, which latter anesthetic, on account of its reputation of greater safety, has been especially used in the United States, although chloroform has enjoyed moderate popularity in the south and west.

The knowledge of the use of chloroform as an anesthetic has been in recent years systematized through the work of the special Chloroform Committee of the Bristish Medical Association, which, having been appointed in 1901, made its final report to that association in 1910. To that committee the profession is indebted for the establishment of many important facts in connection with chloroform anesthesia. When inhaled into the lungs with the air in a certain definite proportion it is taken up by the red blood corpuscles, and perhaps also in part by the protein of the serum, with which it is held in unstable combination, and is carried to all parts of the body. On the nervous system it acts primarily on the higher centers of the brain. It does not act on all parts of the nervous system equally, and it is this fact which makes it useful as an anesthetic, for if its primary effect was equally strong on the centers of respiration as on the centers of intellection and sensation, it would not be available as an anesthetic for operative surgery. It passes from the air in the lungs to the blood in the capillaries, and with equal facility passes back again from the blood to the air of the lungs when that does not contain chloroform. In this way the chloroform is quickly and readily eliminated from the body when its inhalation is discontinued.

When too large a dose is administered at first, there is stimulation of the vagus center and there is danger that this will cause immediate cessation of the action of the heart. Consequently, it is an inviolable rule that a small quantity of chloroform should be administered at first. This should be gradually increased until the patient is fully anesthetized. After this has taken place, the amount administered should be generally lessened, else it is likely to produce disastrous results.

Chloroform acts on the heart by reducing the strength of the ventricular contractions, and it has been shown that the strength of the heart is most diminished a few moments after the anesthetic has been begun. Later the heart muscle recovers and remains improved during the subsequent careful anesthesia. This emphasizes the danger of heart failure during early chloroform anesthesia. The progressive fall of blood-pressure under chloroform is largely due to vasomotor depression.

The committee already mentioned, through its various members and co-workers, determined that the proper strength of chloroform which should be inhaled in order to produce anesthesia is 2 per cent. This, however, should not be used at the beginning. The strength at first should be 1 per cent., which should be rather rapidly increased until 2 per cent. is used. After the patient becomes fully anesthetized, this may be reduced to 1.75 to 1.5, or even to 1 per cent., as the circumstances demand.

In order to obtain this exact percentage of chloroform in the inspired air a number of inhalers have been devised, all of which have some merit and perhaps all have some disadvantage. It will readily be seen, sure. There may be something in the contention that bathing, like other good personal habits, is often not so much a proof of innate superiority as of convenient environment and that, if the two classes were to exchange environments, the former slum-dwellers would become devoted to the daily morning bath, while the bathing classes would slip back to the level of the great unwashed. In other words, hygiene sometimes needs not so much to be extolled as to be made practicable.

A NEW POINT OF VIEW WITH REGARD TO THE CONSERVATION OF NIAGARA FALLS

It is common to declaim over the encroachments of business threatening the destruction of Niagara Falls, but a correspondent of the *Scientific American* takes the opposite point of view and makes a novel proposition. He suggests that much good would come to humanity by allowing this great cataract to work out its board and lodging. He suggests diverting the falls entirely for a period long enough to build a uniform level edge of concrete or vanadium steel, so that the beauty of the falls could be restored from shore to shore with the use of only as much water as necessary. He estimates that one-third of the water which now goes over the falls would be sufficient; the remainder, diverted through power-houses, would provide an immense amount of energy, giving employment to many people, and reducing the price of the necessaries of life. It would bring a good revenue to the state, and would prevent the great waste of energy which seems to trouble this correspondent.

THE IRREPRESSIBLE BENZOATE OF SODA

In a recent editorial[1] discussing the "Expert Opinion of the Royal Scientific Deputation for Medical Affairs Regarding the Use of Benzoic Acid and Its Salts for the Preservation of Food," which was received by the United States government from the American Consulate General of Berlin, the following statement was made:

"Of the decision of the United States referee board these German scientists say:

> "'The series of experiments in this connection made by the American scientists are of too short a duration and the results coupled with certain limitations so that they cannot be regarded as demonstrating the unconditional non-injurious nature.'"

A member of the referee board writes, protesting that this quotation with its introductory statement gives an entirely wrong impression of the attitude of the German scientists toward the referee board. Our correspondent is of the opinion that the sentence quoted had reference, not to the whole series of experiments conducted by the referee board, but only to that series carried out to determine the effect of *large* doses of sodium benzoate. In going over the report with this criticism in view, we are not at all convinced that the authors of the report intended to limit their statement in the way that has been suggested. In order, however, to avoid an appearance of unfairness, we reproduce the entire paragraph of which the closing sentence only was previously quoted:

> "Summarizing, it may be said that the benzoic acid and the benzoic acid natrium [sodium benzoate] only exercises a poisonous effect on the organism after relatively large doses. From the regular occurrence of hippuric acid (the pairing product of benzoic acid) in the human urine it is to be assumed that small quantities of benzoic acid salts [sodium benzoate] which originate in vegetable food or come into existence by oxidation from constituents of this food, circulate in the blood. From this, as well as from the experiments the American commission, one can draw the conclusion th quantities up to about 0.5 gram of benzoic acid may be tak daily in small doses without injury to the human bod Whether larger doses (quantities of several grams) could borne for a longer period by human beings without evil effec can at present not be answered with certainty. The series experiments in this connection made by the American scie tists are of too short a duration and the results coupled wi certain limitations so that they cannot be regarded as demc strating the unconditional non-injurious nature."

Whether the last sentence of this paragraph (whi was quoted in the previous editorial) refers, as o correspondent says, only to the sentence immediat preceding it or to the entire paragraph, we cannot s In view of the conclusions reached by the authors of t report, it seems doubtful that they intended to lin their criticism of the duration of the referee boar experiments only to that series which dealt with la doses of the chemical. Of course, it is useless to disc such a question. The *only rational way of settling* it to ask the authors themselves exactly what they mea This we *have* done. Our correspondent also is of t opinion that the Berlin report expresses the same op ion as did the referee board regarding the harmlessn of small doses of benzoate of soda. The conclusio reached by the Royal Scientific Deputation for Medi Affairs do not, we believe, bear out this statement. was shown previously, it was unequivocally stated th these experts held "that the use of benzoic acid and be zoic acid salts for the preservation of food should not permitted." This opinion was followed up by the sta ment: "Even if small doses of the same may be co sidered harmless for the human organism there is st a danger that with the addition of these substances the various foods and drinks, on the whole quantiti would be daily consumed which would be injurious the organism." It seems probable that if these m really held that small doses of sodium benzoate we harmless they would hardly have said "*Even* if sma doses of the same *may* be considered harmless . . .' they would rather have said "*Although* small doses the same *are* harmless," etc. From a practical standpoi —that is, so far as the health of the public is concern —the point raised by our correspondent is rather a academic one. The important point and the one th was made very plain in the previous note on this subje was that the Royal Scientific Deputation concluded th sodium benzoate should not be permitted in foodstuff It is only fair to call attention in this connection to th fact that the referee board had nothing to do wit formulating the rules governing the use of sodium ben zoate in foodstuffs in the United States. The board wa merely asked to determine whether sodium benzoate wa or was not harmful in certain quantities. After thi question was answered, it was left to men with no scientific training to interpret the findings of the board. The extremely foolish ruling which the government officials succeeded in evolving has already been discussed.

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[1] The Journal A. M. A., Nov. 4, 1911, p. 1541.

TEETH NOT A LUXURY

False teeth are a necessity, not a luxury, and a husband is legally bound to furnish them for his wife, if she needs them. This is not the opinion of a medical or humane society, but the solemn verdict of the Supreme Court of Wisconsin.[1] Unless an appeal is taken to the United States Supreme Court, on the ground that this decision deprives the husband of life, liberty or property without due process of law and therefore unconstitutionally, this pronouncement will stand as the law of the land. It is doubtful if there is any other state which has thus safeguarded the rights of its feminine citizens. Married women in need of teeth should at once move to Wisconsin.

A DISGRACE TO THE PROFESSION

The activities of the physician often are not limited to the practice of his profession. We frequently chronicle his success in literature, in statecraft and in other vocations. If a physician links his name with infamy, the disgrace of that infamy cannot fail to be most keenly felt by the upright members of the profession. It is deeply to be regretted that an instance of the latter kind must now be recorded: In the war on vice in Chicago, orders recently went forth to clean up a certain main thoroughfare leading from the down-town district out to the residence part of the city. A protest against making the houses of prostitution move away from that street was laid before the mayor by a committee of "reputable" local business men (or so they styled themselves; as they refused to give their names or occupations, it is impossible to say what businesses were represented). Sad to relate, according to a report in the newspapers, the spokesman was recognized as a physician, formerly in the service of the city. It is a consolation to record, in passing, the manly reply of the mayor that the order had gone forth for the benefit of the decent people of the city and that men who would stoop so low as to make such a request did not deserve any consideration from the decent citizens of Chicago. Although a physician might have so degenerated as to look with indifference on these haunts of vice, it is hard to understand how one could have so lost sight of the honor of his profession that he could personally advocate the retention of the houses of prostitution, and thus cast disgrace on himself as a man, and on the profession of which he is a member.

SURGEON-GENERAL WYMAN

By the death of Surgeon-General Walter Wyman[1] the nation has lost a faithful administrative officer who had efficiently handled many important problems of preventive medicine. His work was in the main of a constructive character in the highest and most important sense, and that during a period when large questions of public health and preventive medicine were passing through a rapid development. Much of the efficiency of the public health measures of the government service has been due to his genius. His public service has been coincident with the more important development of the Public Health and Marine-Hospital Service to its present state of efficiency. At first this service was concerned practically with little more than the care of sick and disabled seamen and the administration of medical matters in the marine service, but the bureau has now expanded until it includes, besides an efficient quarantine service covering our great and expanding territory, the combating of cholera, yellow fever, plague, hookworm and pellagra, the study of endemic and epidemic diseases of nation-wide extent. It has developed an efficient laboratory and research department and has devised many practical measures for the betterment of the public health, among which may be mentioned the standardization of serums and vaccines, the establishment of sanatoriums for the treatment of tuberculous sailors and seamen in the west, etc. Handicapped as it has been by lack of support from Congress, the Public Health and Marine-Hospital Service has developed on such broad lines that it now represents a public health agency probably second to that of no other nation; greater improvement in the public health service could probably be attained only by the expansion of the present service into the proposed public health department. Surgeon-General Wyman's death is a great personal loss to his many friends and to the medical profession.

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[1] In the case of Clark v. Tenneson, 33 L. R. A., 426.

[1] See page 1778

Medical News

ILLINOIS

Fox River Valley Meeting.—At the annual meeting of the Fox River Valley Medical Society, held in Aurora, November 14, the following officers were elected: president, Dr. Frederick C. Schurmeier, Elgin; vice-president, Dr. William H. Bishop, St. Charles; secretary and treasurer, Dr. William H. Schwingle, Aurora, and member of the program committee, Dr. Edward H. Abbott, Elgin; censor, Dr. Charles A. Potter, Elgin, and delegate to the state society, Dr. James W. McDonald, Aurora.

Honor Aged Practitioner.—The Whiteside County Medical Society held a special meeting in Fulton, November 9, to pay honor to Dr. Charles A. Griswold, who at that time had completed fifty-five years of practice in Fulton, excepting for the three years when he was a surgeon during the Civil War. Dr. Charles E. Parker, Sterling, president of the society, referred to the professional career of the guest of honor, and Dr. William H. Durkee, Fulton, paid a high tribute to the professional ability of Dr. Griswold.

District Society Meetings.—At the annual meeting of the Western Illinois District Medical Society which was held in Pittsfield, the following officers were elected: president, Dr. William E. Shastid, Pittsfield; vice-presidents, Drs. Albyn L. Adams, Jacksonville, and Elizabeth B. Ball, Quincy; secretary and treasurer, Dr. William P. Duncan, Jacksonville. The next meeting will be held in Jacksonville.——The Southern Illinois Medical Association met for its thirty-seventh annual session in Mount Vernon, November 2-3. The following officers were elected: president, Dr. Andy Hall, Mt. Vernon; vice-presidents, Drs. Harry E. Wilson, Centralia, and Dr. Willis E. Lingle, Cobden; secretary, Dr. Charles W. Lillie, East St. Louis (reelected); assistant secretary, Dr. Harry W. Dale, McLeansboro, and treasurer, Dr. James W. Armstrong, Centralia. Cairo was selected as the next place of meeting.

Chicago

Wiley to Speak in Chicago.—The Physicians' Club of Chicago announces that Dr. Harvey W. Wiley, Washington, D. C., will speak before that organization, December 8.

For Improvement of Medical Education in Illinois.—Recognizing the present conditions of medical education, medical practice and medical licensure in Illinois, the Council of

The Propaganda for Reform

HESPERIAN TONIC

A Misbranded Nostrum Sold as a Cure for Diphtheria

Mystery is as essential to the "patent medicine" faker of the twentieth century as it was to the magicians of the second. Take away the element of secrecy and you puncture the bubble of quackery. Within the past few years, the public has shown a tendency to demand of the "patent medicine" manufacturer, to a small degree at least, that openness of dealing that it has long insisted on in more honorable lines of business. But as openness and frankness are inimical to the success of nostrum exploitation, it is evident that the public is asking for something that it will not get. Many of the "patent medicine" makers, it is true, have pretended to accede to this demand and, with a flourish of trumpets, have announced that there is no secrecy about the composition of their products. What they do, of course, is to take a page from the book of the exploiters of so-called ethical proprietaries and publish formulas that are either false or meaningless.

Photographic reproduction of a label from a bottle of Hesperian Tonic. Note the claim that it is "a positive cure" for various serious conditions; also note the absence of any statement regarding the presence of alcohol!

A concern with the somewhat imposing title Temple of Health Medicine Company of San Francisco, sells a nostrum for the alleged cure of diphtheria. It is called Hesperian Tonic and is claimed to have been originated by "the eminent Physician, Scientist and Chemist, J. W. Roberts, A.M., M.D., of the University of Michigan." Who "J. W. Roberts" is, we do not know. The medical directories give no information concerning such a man. According to the official records there is no such man licensed in either California or Michigan; neither is he licensed in Utah, where he claims to have "cured 414 cases of diphtheria in succession."

According to the label, each fluid ounce of Hesperian Tonic contains:

Flussiges Eisenchlorid	Gm.	7,500
Versusster Salpetergust	Gm.	15,000
Distillerte Wasser	Gm.	7,500

To the uninitiated, the apparent frankness of this formula may seem credible. Of course, not one layman in ten thousand will be any the wiser when he has read it than he was before. In plain English, the formula signifies that the preparation is a solution of ferric chlorid and spirits of nitrous ether in distilled water. The idea of publishing the composition in indifferent German is admittedly a master stroke of advertising trickery.

The claims made for Hesperian Tonic were as false as they were cruel:

> "A Positive Cure for Diphtheria, Scarlet Fever, Measles, Pneumonia."
>
> "A Sure, Safe, Speedy and Permanent Cure of That Most Dangerous Disease: Diphtheria."
>
> "A great destroyer of all parasites, animalculæ and microbes of the blood."
>
> "Hesperian Tonic, effectually, permanently and speedily cures the very worst forms of Diphtheria, Canker, Erysipelas, Scrofula, Salt Rheum, Ulcers and Old Sores of long standing."
>
> "Is a powerful and proven Germicide."

This particular fake was brought to the attention of The Journal in a somewhat unusual way. During an epidemic of diphtheria in Chicago, some months ago, the city health department received a long rambling letter from the exploiters of Hesperian Tonic and a dozen bottles of the nostrum itself. It was evidently the desire of the concern to use the epidem as an advertising asset for its preparation. The health department was urged to "put it to the most rigid test at once as a preventive and cure of diphtheria." The officials were als notified that should they wish to order any more of th preparation "the price of Hesperian Tonic laid down in Chicago is $96 per gross bottles."

Tests were made in the Chemical Laboratory of the A ican Medical Association to determine how nearly the co sition that was claimed for the nostrum corresponded t actual make-up. The chemists' report[1] follows:

LABORATORY REPORT

Hesperian Tonic is a brown liquid with an odor resem spirits of nitrous ether. When slightly heated it e ignites and continues to burn, indicating a relatively percentage of alcohol. The liquid responded to tests w indicate the presence of alcohol, iron, chlorid, a trace of ni and some nitrate. The presence of arsenic, heavy metals alkaloids could not be demonstrated. Quantitative ana indicated the presence of alcohol equivalent to 33.72 per U. S. P. alcohol by volume; and iron (Fe) 2.151 gm. 100 c.c., equivalent to approximately 21.50 gm. liquor chloridi, U. S. P. No nitrous ether (ethyl nitrite) was f although the odor of the preparation and the formula po to its presence. In view of the ease with which spiri nitrous ether decomposes, this is not surprising. Experi on mixtures of ferric chlorid solution and spirits of ni ether were made and showed that in such a mixture nitrous ether is decomposed quite rapidly with reducti some of the iron to the ferrous state and the formati some nitrate. From this it is concluded that Hesperian is a water-alcohol solution of ferric chlorid with decompo products of the spirits of nitrous ether, probably present inally.

All of which shows that Hesperian Tonic is merely a s mixture sold under a misleading formula. Incidentally misbranded both because the presence of alcohol is declared and because the ethyl nitrite said to be prese absent. Considering the educational caliber of the av nostrum-maker, it is not surprising that "J. W. Ro A.M., M.D., of the University of Michigan, and found Hesperian Tonic" should be unaware of the readiness which ethyl nitrite (spirits of nitrous ether) decompo he might have saved himself the expense and troubl adding this ingredient to his worthless and wickedly expo "patent medicine."

The viciousness of selling a worthless nostrum for cure of so deadly a disease as diphtheria will be perf patent to every physician. The public, however, has not reached the place where it realizes that the modern me treatment of this one-time scourge by antitoxin is so sure so free from danger as to make dallying with this dange disease little less than criminal. But what cares the expl of "patent medicines" for the danger or death of the man long as the sacrifice results in disbursements of divid to the few!

REPORT OF THE COMMITTEE ON PATENTS A TRADE-MARKS

The Council appointed a committee to discuss the ab connected with the patenting and trade-marking of medic This committee submitted its report, which was adopted the Council. In order that physicians may become fam with these matters, the Council authorized its publication.

W. A. Puckner, Secretar

To the Council on Pharmacy and Chemistry: Your c mittee, after reviewing the existing abuses in connection patents on medicinal substances, recommends that the Co cil on Pharmacy and Chemistry request the cooperation the Council on Health and Public Instruction in a thoro study of the various questions that are involved, with view of endeavoring to inaugurate a more wide-spread inte in the possible injury to the public from a misapplication the laws relating to patents on medicinal preparations.

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[1] The details of analysis will appear in the Annual Report the Chemical Laboratory.

As an illustration of the abuses that may arise and the injustice that can be done at the present time, it may be well to call attention to some of the variations in the laws relating to patents in different countries.

The duration or life of a patent varies from a minimum of three years in some of the South American republics to twenty years in Mexico, Belgium and Spain; our own country limits the life of a patent to seventeen years.

In Germany, Austria and Hungary food products and chemical products as such cannot be patented, although the processes by which such products are produced may be patented. In France no patents are granted for medicines and pharmaceutical compositions, and added precautions are taken to prevent the creation of a monopoly in the manufacture and sale of medicinal products. In Denmark medicines and food products are not patentable, and in Switzerland neither the product nor the process for making a chemical substance can be patented.

In our own country both product and process patents are granted for useful inventions quite irrespective of the uses for which the product is intended.

The rights and privileges conferred on individuals under our American laws relating to patents and trade-marks have been repeatedly discussed in so far as these laws are thought to interfere with or to hamper rational progress in sciences relating to materia medica, and attention has been called to many of the more or less apparent abuses.

At the Chicago (1908) meeting of the American Medical Association a special committee of five was appointed by the House of Delegates to study the questions involved, and to cooperate with the committee on medical legislation in preparing and securing the enactment of a bill which would correct the abuses thought to be connected with the enforcement of our patent laws. (The Journal A. M. A., June 13, 1908 p. 2003).

This committee presented a comprehensive report at the Atlantic City (1909) meeting of the American Medical Association (The Journal A. M. A., June 19, 1909, p. 2063). The committee, recognizing the fact that questions relating to patents and trade-marks are in a state of great confusion, suggested that redress from existing abuses be sought in court rather than by a change in the existing patent laws.

At the St. Louis (1910) meeting of the American Medical Association (The Journal A. M. A., June 18, 1910, p. 2079) the committee presented a report in which it was suggested that the subject be left to the Committee on Legislation and that the special Committee on Patents and Trade-Marks be discharged.

Other organizations have discussed the abuses arising from our present system of patent laws and their enforcement, and it is generally agreed that both for the public as well as for the inventor our laws and our system of patent law jurisprudence could be improved on. One well-known attorney in discussing this question from the point of view of the patentee (Louis C. Raegener, *Jour. Ind. and Eng. Chem.*, 1909, i, 203) asserts that this country gives the worst protection possible to the patentee seeking to enforce the rights plainly given him by the statutory law; on the other hand, by trick and device not found in the statutory law or in the patent laws of any other country, it enables him to hamper trade in the most effective manner possible.

The relation of our patent laws to our trade-mark laws and to corresponding laws in other countries is not generally appreciated and much educational work is needed. For instance it should be pointed out that names that are free in one country may be protected in another so that the publicity given to scientific investigations made in one country may be used for advertising purposes in connection with a proprietary article in another country.

In this connection it might be well to state that in France the word "adrenalin" has been denied registration for fear that a monopoly in the manufacture and sale of a pharmaceutical product might be created if an exclusive right were given to the name by which such product is generally known, while in our own country the same name is applicable only to the product of one firm. On the other hand, the word "antipyrin" which is now included in the Pharmacopeia of the United States and generally accepted as a generic name for a well-known chemical, appears to be protected in some of the countries of Europe and applicable only to the product put out by the original manufacturers.

The abuses arising from this variation in the trade-mark laws of different countries should be studied with a view of suggesting means for overcoming the troublesome questions arising in connection with the nomenclature of synthetics and other new remedies for which arbitrarily coined words are being used.

One other point that is worthy of serious consideration is the fact that practically all of the abuses that are evidenced in connection with patents or trade-marks and new remedies are due to the *abuse* rather than the rational use of the remedies under consideration. For a patent establishes a monopoly; a monopoly permits of excessive profits; excessive profits lead to extensive advertising; extensive advertising leads to misuse of the patented article.

To recapitulate briefly the observations and suggestions herein offered your committee would recommend:

1. That for the present at least no effort be made to test the validity of a product patent which has been declared valid in one or more courts;
2. That the inadequacy of our present patent laws in so far as they pertain to drugs and medicines, and particularly their enforcement, be brought to the attention of the medical profession with the view of securing the interest and cooperation of physicians in an improvement of present conditions.
3. That the Council on Pharmacy and Chemistry request the cooperation of the Council on Health and Public Instruction in a comprehensive and comparative study of the patent laws of the leading countries of the world and subsequently to aid in bringing to the attention of the profession and of the public the abuses arising from proprietary rights in names or in products used in connection with the healing art.

Correspondence

Artificial Respiration in Asphyxia Neonatorum

To the Editor:—My attention was attracted to an interesting article on asphyxia in the Therapeutics Department of The Journal (Sept. 23, 1911, p. 1056). After the author has discussed asphyxia livida and asphyxia pallida with appropriate methods for their treatment, he proceeds by saying that "next, the 'Byrd Dewey' method of artificial respiration should be tried," and then he gives the method of operation, not in accordance with the "Dew method." This leads to a desire on my part to make some important incidental statements.

In March, 1893, I read a paper before the New York Academy of Medicine in which I established a new method of artificial respiration in asphyxia neonatorum, which I regarded as absolutely original with myself, having practiced it for a great many years. In calling Dr. Clifford Edgar's attention to my paper and asking him to participate in its discussion at the academy, he told me of a method proposed by Dr. Byrd of Baltimore, which was very similar and which he had published in his book. I had never before seen or heard of Dr. Byrd's method and cannot now describe his procedure.

The directions for my method are to grasp the infant with the left hand, allowing the neck to rest between the thumb and forefinger, the head falling far over backward, straightening the mouth with the larynx and trachea, at the same time serving to raise and hold open the epiglottis. The upper portion of the back and scapula resting in the palm of the hand, the other three fingers should be inserted in the axilla of the baby's left arm, raising it upward and outward. Then, with the right hand, if the baby is large and heavy, grasp the knees in such a way as to hold them with the right knee resting between the thumb and forefinger, the left between the forefinger and middle finger. This position will allow the back of the thighs to rest in the palm of the operator's hand. If the infant is small and light it will be found easier and more convenient to hold it in the same way by the ankles instead of by the knees, allowing the calves instead of the thighs to rest in the palm of the hand. The next step is to depress the pelvis and lower extremities so as to allow the abdominal organs to drag the diaphragm downward, and with the left to bend the dorsal region of the spine gently backward. This causes the ribs to move upward and outward, opening up like the segments of a fan, thus enlarging the cavity of the thorax both laterally and vertically, exciting inspiration. Then, to excite expiration, reverse the movements, bring the head, shoulders and chest forward, closing the ribs on each other and at the same moment bring forward the thighs, resting them on the abdomen. This movement arches the lumbar region backward, and so bends the infant on itself as to crowd together the contents of the thoracic and abdominal cavities, resulting in a most complete and forcible expiration. While this movement is a powerful one, the operator can, by his manipulations, accomplish it without shock and render it as gentle as he pleases. These movements should be repeated from ten to fourteen times a minute. In some instances it will be found desirable by mouth-to-mouth inflation to fill the lungs. This will often aid the introduction and expulsion of air. This method is prompt, reliable, easy to perform and perfectly safe; it possesses all the advantages of the Schultze method and none of the disadvantages.

ADVANTAGES OF METHOD

1. It is most efficient in all cases in which artificial respiration in asphyxia neonatorum is indicated.

2. Years of experience have proved its unquestioned value.

3. It can be practiced with ease and readiness to the operator.

4. Its movements are easy and can be resorted to at any moment and anywhere.

5. While its inspiratory movement will be found, by experience, to be even more efficient than in most other methods, the expiratory movement is far more complete and satisfactory than in any other method.

6. Nearly or about all of the air drawn in can be exhaled. This is a great advantage.

7. Owing to the force and at the same time to the absolute control which the operator has over the expiratory movements, he is able to compress the contents of the thoracic cavity to just exactly that degree deemed by him wisest and best, thereby favoring and hastening the general circulation, since by every act of compression the blood is forced from the heart and large blood-vessels, the valve opening for the forward flow and closing on any recoil or backward movements.

8. This method can be employed before cord is cut, where it seems important to save as much blood as possible to the infant.

9. The operator can sit or move from place to place about the room, greatly to his relief from fatigue, still continuing the respiratory movements.

10. If thought best, the movements can be kept up while the infant is immersed up to its chin in hot water.

11. By elevating the buttocks and depressing the head and shoulders, the expulsion of mucus can be effected as in the Schultze method.

12. This method can be readily alternated with other methods when thought best.

J. Harvie Dew, *New York.*

Transmission of Disease by Books

To the Editor:—I am preparing a paper on "Books As a Source of Disease," to be read before the International Congress of Hygiene and Demography, and in order to obtain data I respectfully request the readers of The Journal to send me an account of any cases the source of which has been traced to books or papers, or in which the evidence seemed to make books the offender. Furthermore, I would be interested in information about cases in which illness or even death has been caused by the poisons used in book-making. All the information possible is wanted to present as complete a pap as possible. As in the case of insects which we now kno to be "carriers of disease," it is first necessary to collect th scattered evidence in order to show that there is real dang in books; this evidence will lead to better care being take of libraries, and thus be a factor in preventive medicine.

W. R. Reinick

1709 Wallace Street, Philadelphia.

Data on Uterine Cancer Patients Wanted

To the Editor:—With the approval of a number of pro inent gynecologists of this city, I am gathering statistics uterine cancer from a new aspect; with the hope that so deductions of value may be made from a long series of ca I am not a physician myself, but I have printed blanks wl I will be glad to send to any physician who will have patients fill them out. They are printed in the simplest f possible, so that they may be filled out by the patients th selves, thus relieving the physician of that labor, except t he is requested to supply the diagnosis of the case on the page after the blanks have been otherwise fully filled by patient. All suggestions of cancer have been studio avoided, and the blank contains a statement to the pat that a study is being made of nervous disorders.

I will be glad to send as many blanks as are desired, to physician who will have them filled out for me.

E. Atlee, West Spruce Street, Philadelphi

A National Department of Health

To the Editor:—However we may view osteopathy, must congratulate osteopaths, as was done in the editoria The Journal (Nov. 11, 1911, p. 1620), on their chang front regarding the national department of health movem Their anxiety lest a physician be appointed to the cabinet closes only a small remainder of those fears which impe them to oppose the Owen bill *in toto.* I think that v there appointed as secretary of health a recognized maste sanitary organization, all these sectarian differences w coalesce in one voice of satisfied approval.

Whether it be premature to suggest and urge a fit man secretary of health is a matter of forecast. I will risk b called out of order, however, and say that were Colonel Gor asked to try to do for the United States what he has d for the Isthmus of Panama, no one cognizant of his rec could oppose the choice.

Joseph S. Lewis, *Buffalo, N. Y*

Philanthropic Cancer Work

To the Editor:—The remarkably good work, from standpoint of science as well as philanthropy, which is be conducted by the St. Louis Barnard Free Skin and Ca Hospitals, should be called to the attention of the medical fession through the columns of The Journal. It will not devoid of interest to the readers to learn that in the Mid West opportunities are presented to physicians for the obs vation and study, at the bedside and in the laboratory, cancerous disease to an extent not equaled anywhere in t country. The large wards and well-attended outdoor servi are supplemented by laboratories equipped for every phase cancer work which might suggest itself. The pathologic a research work is in charge of a full-time director, aided competent assistants.

From the standpoint of philanthropy the hospital is uniq Sufferers from cancerous disease unable to purchase elsewhe accommodations and services are admitted free; but no patie has access to the hospital who is able to seek elsewhere t necessary relief and treatment. Everything is free both to t patients and to those physicians who wish to avail themselv of the advantages of the hospital. Necessarily the number patients who can be admitted is limited, and it is not a hom for incurables; but the administration makes every effort accommodate those seeking admission and extends the benefit of the institution to all who need them.

The St. Louis Cancer Society has also started a movement for the diffusing of knowledge concerning cancer and its ravages. During the coming winter members of the medical staff will deliver lectures, scientific as well as popular, before the medical societies of the state and before popular audiences.

The awakened concern of the medical profession in the cancer question is best illustrated by the fact that the Cancer Society was induced to undertake this work partly on the initiative of the medical societies which have requested lecturers for their meetings. This new government gives promise of doing work in a field hitherto much neglected.

E. J. Goodwin, St. Louis.
Secretary, Missouri State Medical Society.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DISAPPEARING INKS

To the Editor:—Some time ago I read a formula for an ink which would fade in a few days after being put on paper, but I am unable to find the reference at present. For obvious reasons such an ink would be of great value in prescription-writing. Can you give a formula for such an ink? J. L. Wicks, Evanston, Wyo.

Answer.—Starch iodid is the substance which has been most frequently recommended as the basic constituent of "disappearing inks." A recent article in the *Practical Druggist*, October, 1911, contains the following:

"There is a well-known proprietary article sold in Paris under the name of 'Encre pour les Dames' (ink for the ladies). Hager, in a recent scientific journal, states that this consists of iodid of starch, and is especially intended for love letters. In four weeks characters written with it disappear, preventing all abuse of letters, and doing away with all documentary evidence of any kind in the hands of the recipient."

While inks of this sort have often been mentioned, none of the formulas proposed, we believe, would yield such an ink. Either the marks produced by the various preparations which have been proposed do not vanish with time or else these marks appear capable of being restored. If an ink of starch iodid does disappear, the blue color of the starch iodid could no doubt be restored with a suitable treatment of a dilute iodin solution. While such disappearing inks might possibly be valuable to the prescribing physician, it is a blessing that they have not been available. If such an ink were discovered, it could and would be used for criminal purposes, for it would enable one to write checks, notes, and promises which, in the course of time, would leave behind but a blank slip of paper.

A CRITICISM OF CERTAIN PRESCRIPTION-WRITING

To the Editor:—In The Journal, November 4, several errors in Latin occur in the fifth prescription (p. 1523), which reads as follows:

℞	Gm. or c.c.	
Tincturæ belladonnæ	5	gr. lxxv
Olei amygdalæ dulcis (olei amygdalæ expressi)	30	℥ i
Vitellum ovi unius		
Aquam destillatam ad................	200	℥ vi ʒ v
Fiat emulsum		

Misce S. Two teaspoonfuls three times a day.

It is ungrammatical to write "aquam destillatam"; it should be "aquæ destillatæ." "Emulsum" is barbarous Latin; it should be "emulsio." It is wrong to write "vitellum *ovi*"; it should be "vitelli ovi." I enjoy reading The Journal, but such mistakes are provoking. Why not write the prescriptions in English? In the preceding (fourth) prescription (given below) there is also a mistake.

℞	Gm. or c.c.		
Extracti belladonnæ	3		
Foliorum belladonnæ āā....................	0	33	gr. v
Extracti gentianæ q. s.			
Fiant pilulæ, No. XXX.			

Misce S. One pill before breakfast. Increase slowly to five pills.

Without mentioning the error of prescribing "extracti belladonnæ 3 gm.," which is plainly a *lapsus calami*, I would call your attention to the fact that the prescription says "fiant pilulæ, No. XXX" and then comes "Misce S." After having made thirty pills, what shall the druggist mix? Perhaps the box and the pills? The correct way to write it would be "Misce. f. pil. No. XXX, S."

Alex Loew, Chicago.

Answer.—While we admit that Latin is sometimes a snare to the writer of prescriptions and that there would often be an advantage in writing in English, we believe that our correspondent's criticisms with regard to the Latin in the first prescription mentioned are made without due consideration.

"Vitellus" cannot be put in the genitive case, for there is nothing for it to depend on; it is the direct object of "recipe" and must therefore be in the accusative case. When the genitive of the name of the ingredient is used in a prescription, as it ordinarily is, it is a partitive genitive depending on a noun of quantity expressed by signs. This noun of quantity is grammatically in the accusative as the direct object of "recipe;" thus: "Recipe olei amygdalæ dulcis unciam unam." The prescription directs the druggist to take the yolk of one egg. If he were directed to take a given quantity of egg yolk, it would be correct to write "vitelli," the genitive then depending on the noun of quantity; as it is, "vitellum" is correct. "Aquam destillatam" is likewise the direct object of "recipe" and therefore is correctly written in the accusative case also. The druggist is directed to take, not a given quantity *of* water but water *up to* (ad) a certain quantity. In other words, the construction of "vitellum" and "aquam" is parallel to that of "unciam unam" (abbreviated to "℥ i") in the preceding line, and not to that of "olei."

We do not know on what grounds our correspondent declares "emulsum" to be a barbarism. We believe that the use of "emulsum," the neuter perfect participle of *emulgeo*, to signify a substance resulting from emulsification, is more in accordance with classical usage than the use of "emulsio," which would, in classical usage, mean the process. At any rate, while "emulsio" is used in some other countries, "emulsum" is the form adopted by the United States Pharmacopeia and in general use in this country.

As for the other prescription mentioned, our correspondent is clearly right. The manuscript was correct, both errors having crept in during the process of type-setting. As our correspondent says, the figure 3 opposite "extracti belladonnæ" is easily seen to be a mistake because of the "āā" following "foliorum belladonnæ" in the next line. "Misce," of course, should precede "fiant pilulæ." We owe thanks to our correspondent for the trouble he has taken to point out errors.

MEYER'S REAGENT

To the Editor:—Kindly inform me of the correct proportions that compose Meyer's reagent used in testing for blood.

J. P., St. Louis.

Answer.—Meyer's reagent is a solution of phenolphthalin (the reader is cautioned that this is not phenolphthalein) in sodium hydroxid solution. It may be prepared by dissolving 0.032 gm. of phenolphthalin in 21 c.c. of decinormal sodium hydroxid and adding a sufficient amount of water to make up the volume of solution to 100 c.c. The reagent may also be prepared by bringing together 1 c.c. of decinormal sodium hydroxid with somewhat more phenolphthalin than will dissolve in this quantity of alkali, diluting with 10 to 20 c.c. of water, filtering and adding to the filtrate 20 c.c. of decinormal sodium hydroxid and sufficient water to make up to 100 c.c. To this solution a minute amount of a solution of hydrogen peroxid is added. J. H. Kassel states that in most blood work it is sufficiently accurate to add 0.1 c.c. of the 3 per cent. commercial hydrogen peroxid solution. He has found that the distilled water used in making these solutions must have been distilled from glass, as minute traces of copper will act as an oxidase and give a pink color to the solution of alkalin phenolphthalin on the addition of hydrogen peroxid.

Phenolphthalin or dioxy-triphenyl methane carbonic acid is the leuko-compound of phenolphthalein and on oxidation it is converted into the latter compound. Pure phenolphthalin is colorless in alkaline solutions, but if it be oxidized in the presence of alkali, there results the deep purple-red coloration characteristic of phenolphthalein in alkali. It is on this change, brought about by the presence of minute amounts of blood, that the use of phenolphthalin as a test of the presence of blood depends.

Phenolphthalin may be prepared from phenolphthalein by dissolving the latter in a considerable excess of 30 per cent. sodium hydroxid solution, boiling with an excess of zinc-dust until a few drops of the strongly alkaline liquid no longer gives the color of phenolphthalein, after neutralization with hydrochloric acid and the addition of sufficient alkali to give a slight alkaline reaction. The solution is then decanted from the excess of zinc-dust and the phenolphthalin precipitated by acidifying with hydrochloric acid. The substance is then collected on a filter, purified by several crystallizations from water and alcohol and dried in the air at the ordinary temperature or in the oven at temperatures ranging from 50 to 80 C. It must be carefully protected from air and light and from dust.

of 4,146 school children in Boston, a few years ago, showed that 1.33 per cent. harbored the Klebs-Loeffler bacillus; and a second examination, a week later, of 4,087 cultures, showed that 0.93 per cent. were positive. Later, 298 absentees, new pupils, etc., were examined and nine were found positive. In the grand total out of 8,531 throats examined, 1.16 per cent. were found positive.

DISCUSSION

Dr. R. C. Smedley, Salt Lake City: An army officer at Manila reports that his own daughter was a diphtheria carrier for a great many months, and that large quantities of antitoxin were administered, but without causing the bacilli to disappear from her throat. From a swab of the throat an almost pure culture of the staphylococcus was obtained, and an antitoxin derived from this strain and administered in the usual way brought about very gratifying results in a short time.

Dr. F. S. Bascom, Salt Lake City: I desire to emphasize the necessity of care and watchfulness in every case of sore throat. A boy was brought to me by his mother complaining of a sore throat. Examination showed a throat but slightly congested. I had committed myself in saying that I did not consider the condition serious, when the mother informed me that the city bacteriologist had pronounced the case diphtheria. The child was kept under observation, and within a week later there was unmistakable evidence of diphtheria. This case might have gone unprotected had the organism not been discovered.

Foreign Bodies in the Orbit

Dr. L. W. Snow, Salt Lake City: A boy, aged 5, was struck in the right eye with a grain of wheat, blown by a companion through a hollow cane. Two weeks after the accident, the eye was inflamed and painful; the only visible evidence of an injury was a small corneal ulcer on the nasal side of the pupil. There was no indication that the object had entered the eye-ball. A severe panophthalmitis developed, and within three weeks from the date of the injury the eye was hopelessly lost. Then a kernel of wheat, swollen and beginning to germinate, came out from some part of the orbital cavity. Symptoms of sympathetic irritation in the sound eye indicated the necessity of an immediate enucleation. The injured eye-ball was found filled with pus.

A boy, 2½ years of age, fell with a lead pencil in his hand. An inch or more of the pencil passed through the upper lid into the orbital cavity. Immediate surgical aid was sought. The wound was adequately enlarged and several pieces of wood and lead were removed but the point of the pencil was not found. I saw the child the next day and, under chloroform anesthesia, examined the wound carefully. Several small pieces of wood were removed. Two years after the accident the eye appears normal in every respect.

A boy, 2 years old, fell from a fence on a broken willow twig that passed through the lower lid of the right eye. A large piece of wood covered with bark was removed from the orbit, but the wound discharged for two months, when I saw the patient for the first time. A fistulous tract was curetted, considerable diseased tissue was removed, but no foreign body was discovered. The wound discharged at intervals for more than a year, and several particles of bark came away. Last February I made a free incision through the wound, near the lower border of the lid, and explored the posterior part of the orbit. Considerable bark and a small pocket of pus was found. A drain was introduced and a prompt cure followed.

Tonsillotomy and Tonsillectomy

Dr. F. W. Stauffer, Salt Lake City: Before attempting any operation on the tonsil a careful diagnosis is important, to determine the extent of the disease and the effect, if any, on the general system. Operations before 15 should be conservative, barring, of course, cases of tuberculous cervical glands and general systemic infections. In these cases complete enucleation of the tonsil in its capsule is the proper procedure even in childhood. The ideal operation would be the removal of all tonsillar tissue, including the crypts, but leaving the capsule in place, except where there are signs of tuberculous or general infection, or where there are tuberculous deep cervical glands. It is also imperative in frequent attacks of quinsy. A simple and effective method, in general, is to remove as much of the diseased tonsil as possible with some form of tonsillotome and a punch to remove any diseased crypts remaining. The pendulum has swung to the extreme limit in radical tonsil surgery and it is hoped it will not react too strongly toward conservatism. There is a rational middle ground determined by reason and judgment.

DISCUSSION

Dr. R. R. Hampton, Salt Lake City: I advocate the complete removal, or tonsillectomy. I doubt if only the diseased part of a tonsil, the diseased crypts, can be removed. The crypts run down and branch out; and a few infected crypts left behind would mean recurrence in time. Sixty per cent. of tonsils are removed on account of mechanical interference with the functions of the nose and throat. I have never observed any ill effects following complete tonsillectomy. The worst cases of systemic infection that I have seen have occurred in the deeply buried variety of tonsil; in one case of this type acute Bright's disease developed one month later. It is in this type also that one most commonly finds caseous plugs embedded in the crypts.

Dr. A. R. Irvine, Salt Lake City: European surgeons are beginning to adopt the radical operation on account of the frequency of relapses after incomplete removal of the tonsil, especially in cases in which systemic infection can be traced to tonsillar infection.

Dr. W. M. Stookey, Salt Lake City: The tonsil question will not be settled definitely until the function of the tonsil is positively known. I believe in the complete removal of the tonsil. In my experience the results have been proportional to the completeness of the operation. Unless the tonsils of very young children seriously interfere with the functions of the throat, they should not be disturbed. As only a microscopic examination could reveal the extent of infection in a diseased tonsil, I do not believe that the diseased part could be removed alone.

Congenital Idiopathic Dilatation of the Colon: Hirschsprung's Disease

Dr. J. F. Critchlow, Salt Lake City: Some unusual features of this rare disease were noted in a case coming under my care. A man, born in Sweden, age 42, occupation mine-foreman, entered the hospital suffering from severe shock, abdominal pain, nausea and vomiting, with the history that his present illness began about forty-eight hours previously, with great abdominal pain, colicky in character. All efforts by his attending physician to secure any bowel movements by the use of cathartics or enemas had failed. He expelled no gas since the onset of the symptoms, and singultus was present. One year previously he had a very severe similar attack. Since then he has had attacks of colic of moderate severity about once a month, with no vomiting, and relieved by cathartics. His expression was anxious, his face covered with cold sweat; pulse 110, rapid and weak; temperature 99.2 F; breathing shallow. Examination of the abdomen revealed great distention, extending from the pubes to the rib-margin, equally resonant throughout, except some dulness in the flanks; no mass was palpable. Examination of the urine showed nothing abnormal; specific gravity, 1,028.

A median incision below the umbilicus was made, followed by a gush of clear fluid from the abdominal cavity. A large, smooth, tense, purple bowel presented in the wound. Its great size, and the longitudinal band, enormously widened, identified it as some portion of the colon. Extending the incision to the umbilicus, and introducing the hand, a startling condition was disclosed. What seemed to be the ascending colon extended perpendicularly from the pubes to the diaphragm, curved backward under it and back again to its source near the left side of the bladder, making two parallel arms of a loop filling both iliac fossæ as well as the upper abdomen; both arms of the loop came together near the bladder, forming an elipse of enormously dilated gut. Distention was due mainly to gas, yet weighted down with semi-fluid material. On the anterior surface, midway up the associated arms, was discovered a firm bridge of tissue and attached to the anterior abdominal wall above the umbilicus by recent adhesions. The viscus was tapped and drained of volumes of putrid-smelling gas and liquid, and two basins of blood-stained feces, to facilitate delivery of the gut through the incision. The hole in the bowel was sutured and the gut delivered through the wound. It was then discovered that there still remained in the abdomen a normal ascending, transverse, and descending colon to a point 3 or 4 inches below the splenic flexure. At this point the colon passed in front of the other arm, becoming enormously dilated, and passed up the right and down the left of the abdomen to the rectum, the dilatation ceasing at this point. The loop of tissue mentioned proved to be a "monstrous" arrangement of the mesentery. It was a complicating volvulus, resembling a giant horseshoe on a rubber pad. When the true condition was recognized, resection of the affected portion was undertaken. The descending colon and upper rectum were sutured end to end and drainage provided. The patient was in poor condition when he left the table. Hypodermoclysis and other supportives were exhibited. The patient succumbed to shock, thirty-six hours following the operation.

DISCUSSION

Dr. J. E. Tyree, Salt Lake City: One of the striking features of this case was the deep pigmentation of the tissues, indicating a chronic process. The pigmentation might be due to either bile in the intestinal contents or extravasated blood into the intestinal wall and mesentery. Hypertrophy of all of the coats of the intestine was present, excepting the serosa. Hypertrophy and hyperplasia involving the circular and longitudinal fibers of the muscular coats were very pronounced possibly indicating the continuous effort of the bowel to empty itself.

Dr. O. B. Fowler, Denver: I have a case of this kind now under observation. The subject is a man 44 years of age. By the administration of bismuth by the mouth, and injections of bismuth into the rectum, and the employment of the Roentgen ray, we have been able to make a positive diagnosis. The patient suffers from well-marked symptoms of auto-intoxication. He has often gone for weeks without a movement of the bowel. To cure this condition, we expect to do a resection of the bowel.

(To be continued)

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Oct. 11, 1911

The President, Dr. C. B. Longenecker, in the Chair

Preventive Medicine: Present Achievement and Future Field of Activity

Dr. D. H. Bergey: Some of the more important measures employed in preventive medicine are isolation, disinfection, mmune serums, vaccines, chemotherapeutic agents, and the chemical, physical and biologic agents used in the purification of water, sewage and milk. The efficiency of isolation is frequently defeated through neglect of proper care on the part of physicians and nurses. Disinfection is often ineffectual because inefficient materials are employed in too great dilution or for insufficient time. The prophylactic value of diphtheria and tetanus antitoxin has been demonstrated repeatedly. The great value of vaccine virus in warding off smallpox, and the value of vaccine in eradicating typhoid, cholera, plague and dysentery cannot be estimated. Of the chemotherapeutic agents, quinin in malaria and salvarsan in syphilis are of great value in limiting disease and death. The great activities of laboratory investigators lead us to hope that other valuable chemotherapeutic agents may soon be discovered. The filtration of water and sewage and the pasteurization of milk serve to reduce the morbidity and mortality rates, not only of the diseases of the gastro-intestinal tract, but the general mortality rates in communities where these measures are employed.

The important diseases which are still not under satisfactory control are scarlet fever, measles, pneumonia and tuberculosis. The careful application of the preventive measures, now in our hands, will serve to control more effectively these great scourges of humanity. It is probable that the day is not far distant when we shall have more efficient prophylactic measures in the form of vaccines, immune serums or chemotherapeutic agents to control the latter diseases.

DISCUSSION

Dr. B. A. Thomas: I must take exception to Dr. Bergey's statement that immune serums other than antidiphtheritic and antitetanic are valueless. Any one having had clinical experience with the use of antigonococcic serum must be convinced of the great value, therapeutically, of this agent in acute, subacute and, to a less degree, chronic gonorrheal synovitis. In view of the failures to produce an efficient antistaphylococcic serum, about two years ago I endeavored to immunize a ram by suspensions of dead staphylococci followed by living suspensions. A polyvalent suspension of eighteen various strains from abscesses, furuncles and carbuncles was used. The animal was highly immunized, employing the opsonic index as a guide. At the conclusion of four months the ram was bled to death and the serum collected and sealed in a sterile ampulla. I have used this serum in two or three dozen cases, including bacteriemia, recurrent furunculosis and aggravated carbunculosis, and in the majority of cases with immediate benefit. I am inclined to think that the therapy of the future in these cases may be the administration of serum in the acute attack because of its more immediate effect, followed subsequently by the autogenous bacterin for purposes of more prolonged immunization to prevent recurrences.

Dr. Leonard D. Frescoln: Our necessary association with the lower forms of animal life might be dwelt on in this connection. The ordinary house-cat is often the means of spreading ringworm and favus. The dog has been referred to in spreading hydrophobia, and in Australia there is a six months' quarantine on newly arrived dogs. This brings up the question of municipal and government control. Our country is behind some other great nations in this matter of regulation in the way of controlling carriers of disease. It is an easy matter to report transmissible diseases by postals furnished by the city; then early fumigation with formaldehyd, etc., may be begun and the root of the matter struck. Practitioners should endeavor to detect and report cases of scarlet fever, tuberculosis, etc., early.

Dr. A. C. Abbott: The foundation-stones of the structure called modern preventive medicine were in a very large part laid by men who were not practitioners of medicine in the ordinary sense of the term, and whose education and interests had comprehended subjects other than those strictly medical. For instance, Pasteur, to whom we owe so much, was not identified with practical medicine, though the value of his researches to problems of preventive medicine cannot be overestimated. Metchnikoff, whose doctrine of phagocytosis has done so much to elucidate the problems of immunity, is not a medical man but a zoologist who realized the importance of particular lines of zoologic investigation to some of the riddles of medicine. Koch, one of the masters of medicine, we find in his youth while pursuing a country practice, supplying himself, through work in special lines of investigation, with knowledge that had not been included in his medical course; knowledge which he regarded as necessary to the problems that he proposed to undertake. Ehrlich, it is true, is a medical man, but it is alleged that he was regarded at the University of Berlin as one of the poorest medical students that had presented himself for examination, and had it not been for the brilliancy of researches already done, in branches related to medicine, doubt has been expressed that he would have received his medical degree. Had Dr. Meigs, who wrote those classical papers on malaria, been educated more broadly in the fields of natural science, it might not have been necessary for us to wait for the discovery of the cause of malaria until the matter was taken up by Laveran. Carlos Finlay, a practitioner of medicine, did, however, possess knowledge and interest which led him to pursue studies not strictly medical. His observations enabled him to offer suggestions that must be taken as the badly ventilated workrooms and factories. There is no danger of tuberculosis in a properly ventilated and well-aired workroom." Pictures illustrating this show men at work at granite cutting and in an iron foundry, with clouds of dust, a dirty and poorly ventilated bakery, and, last, a machine-shop with ideal conditions where there is plenty of fresh air and light. Other mottoes call attention to the need of fresh air and sunshine, open windows, cleanliness, etc., and are illustrated by pictures showing methods of getting fresh air at home by means of balconies, tents in the yard, tents on the roof, etc.

There are two very striking pictures showing how milk is contaminated. A typical tailor sweatshop is compared with a room where conditions are as they should be. In the right-hand panel mottoes are devoted more toward the prevention of disease and are planned to demonstrate what children should do to keep healthy and strong. Such mottoes as "Keep the body clean and a cheerful mind; worrying doesn't mend matters," "Take time for regular rest, exercise and recreation; you will do better work," "The best way to treat tuberculosis is to avoid getting it," "The children shown in the pictures have not got tuberculosis, they are learning how to live so as to avoid getting it in the future," are illustrated by photographs of public baths, playgrounds, outdoor schools, and children taking their exercises out of doors, while attending our ordinary public schools.

The frames are firmly screwed into place and the pictures are covered with celluloid rather than glass. The total cost of this exhibit is $35. Out of our appropriation twenty such exhibits were made. A pamphlet entitled "School Tuberculosis Exhibit; Suggestions in Regard to its Use and Demonstration," was prepared by me and issued by the Board of Trustees of Hospitals for Consumptives. Copies of this pamphlet in sufficient numbers are sent along with the exhibit. These exhibits have been distributed throughout the state as widely as possible. Wherever possible, we have urged the local antituberculosis association, under whose auspices in almost every case the exhibit is managed, to buy the exhibit outright, thus providing us with funds to build others. Where this could not be done the exhibit has been loaned for a period of months sufficient to demonstrate it in all the schools. Nearly all of the twenty exhibits built from the original appropriation are loaned in different towns and cities in the state, while an equal number have been bought outright by various antituberculosis associations.

I have tried to make it clear to every one to whom we have either loaned or sold an exhibit that this is only an experiment and that, in many instances, changes and modifications should be made to suit local conditions. The ideal plan, in my opinion, for the demonstration and use of such an exhibit would be somewhat as follows: The exhibit is sent to a certain public school. At a given time arrangements are made with some physician well acquainted with the subject to meet the teachers and to explain and demonstrate the exhibit to them. It should then be set up in a schoolroom where it can be examined by the children in their leisure hours and demonstrated to them in small groups by the teachers, or, better still, by the school physician or school nurse. After one class has made a careful study of it, the children should be given an examination based on the lessons which they are supposed to have learned. The exhibit should then be sent to another room and the process repeated.

In order to get further information for future work along this line I sent a circular letter to all those who were using our exhibit asking their opinion as to its value, and suggestions as to how they would change or add to it. All my replies were unanimous in stating that the exhibit was of very great practical value. Worcester qualified this statement by saying it was good for pupils in the high school and down to the seventh grade of the grammar school. Clinton likewise said that it was not of value below the seventh grade. Fitchburg believed its value to be very great except to the youngest children. There was a general consensus of opinion that it was hard to handle and move around, and many seemed to think that with fewer and larger pictures it would do better work than in its present form; many made the suggestion that ce tain of the pictures could be easily enlarged and placed eith on cardboard or linen backs so as to be hung up and separatel demonstrated. The Boston Tuberculosis Association has ha the pictures in the exhibit colored, which certainly adds t its attractiveness, but also to its expense. The Boston as ciation has also had a small stand, about 1½ feet high, ma on which to place the exhibit.

From my experience with this exhibit so far and from careful consideration of the replies sent in answer to my cir cular letter, I have come to the conclusion that at least tw different grades of exhibits are needed, one somewhat the sa as the one here described, but altered or added to in order to me local needs, where there are photographs of actual conditio and another form of exhibit infinitely simpler, in which b means of striking diagrams (not photographs) lessons of t simplest nature are taught. A committee of the Boston Associ tion for the Relief and Control of Tuberculosis is now at wo planning some "health charts" according to this idea. The charts, as now planned, will consist of a dozen or more shee of paper at least 2 by 3 feet in size, backed by linen, and fa tened together at the top by a wooden rod. On each she there will be one motto, illustrated by a picture or two co trasting pictures, in at least three colors. Such a chart wi twelve pages, attractively gotten up and decorated by a large lithographing concern would cost under $5, after t initial cost of preparing plates, etc., had been met.

The advantages of such a chart for young children obvious: 1. It is inexpensive. 2. It is easy to demonstr and requires little or no technical knowledge on the part the teachers. 3. It is light and easy to handle so that it be hung over the front of the teacher's desk, or on a wall, in any other convenient place. 4. It is simple and will not c fuse young children's minds by the multiplicity of ideas p sented. 5. If properly prepared, with but a single fact to learned on each page, it will teach things worth knowing in forcible a manner as the picture of the alcoholic stomach impressed on my youthful imagination.

295 Beacon Street.

POSTGRADUATE COURSE FOR COUNTY SOCIETIE

[NOTE.—The pamphlets containing the outline of the postgrad study course for county societies for the coming year are ready distribution. Secretaries of county societies can secure supplies writing to the Secretary, Council on Health and Public Instruct American Medical Association, 535 Dearborn Ave., Chicago.]

Third Month—Fourth Weekly Meeting

GOUT[1]

THEORIES OF CAUSATION

URIC ACID THEORIES:[2] (1) Increased formation and decrea elimination. (2) Decreased alkalinity of blood, with increased formation. (3) Excessive formation and ac mulation, exciting inflammation. (4) A hypothetic f ment. (5) Accumulation from diseased condition of k neys.

CLINICAL VARIETIES

ACUTE GOUT: Prodromata, pains, restlessness, dyspeps urine. Asthmatic attacks.

Attack—Time of onset, joints usually involved, local sig temperature, length of attack.

RETROCEDENT GOUT: Visceral or suppressed gout. Gastr intestinal, cardiac, cerebral symptoms.

CHRONIC GOUT: Transition from acute to chronic. Joint involved. Deposits, location and chemistry. Deformit Course. Associated conditions.

IRREGULAR GOUT: Heredity and lithemic state. (a) Joi and muscle pains. Muscles and joints usually involved (b) Cutaneous eruptions. (c) Gastro-intestinal disorders (d) Cardiovascular symptoms. (e) Nervous manifest tions. (f) Urinary symptoms. (g) Pulmonary a ocular disorders.

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[1] Osler's Modern Medicine, von Noorden's Diseases of Meta olism.

[2] Magnus-Levy: Amer. Jour. Med. Sc., November, 1910.

Arthritis Deformans

Etiology: Neuropathic origin, reasons therefor. Bacteriology. Evidences of an infectious origin. Metabolic changes. Sex. Age. Social condition and nervous shock.

Pathology: Changes occurring in synovial membranes, in cartilages, in periarticular structures, in bones. Value of *x*-ray. Differentiate pathology from gout and chronic rheumatism.

Symptoms: Acute—Frequency, age and sex. Relation to pregnancy and lactation. Multiple arthritis. Course.

Chronic—Symmetrical arthritis, pain, physical signs, characteristic deformity of hands and feet. Muscles, skin, nails. Monarticular arthritis. Spondylitis deformans. Heberden's nodes, age, sex, joints, physical signs. Course of chronic form. Arthritis deformans in children.

Monthly Meeting

The Cardiac Complications of Rheumatism.
Diagnosis and Treatment of Rheumatoid Arthritis.
Uric Acid in Gout.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

California: Los Angeles, December 5-8. Sec., Dr. Charles L. Tisdale, 929 Butler Building, San Francisco.

Delaware: State Society and Homeopathic, Dover and Wilmington, December 12. Secretary of the Medical Council, Dr. Henry W. Briggs, Wilmington.

Florida: Eclectic, 1805 Florida Avenue, Tampa, December 4. Sec., Dr. Hiram J. Hampton.

Kentucky: The Armory, Louisville, December 19-21. Sec., Dr. J. N. McCormack, Bowling Green.

Maryland: Regular, 1211 Cathedral Street, Baltimore, December 12. Sec., Dr. J. McP. Scott, Hagerstown.

Ohio: Columbus, December 5-7. Sec., Dr. George H. Matson, State House.

Pennsylvania: Regular, Homeopathic and Eclectic, Philadelphia and Harrisburg, December 12-15. Secretary of the Medical Council, Mr. Nathan C. Schaeffer, Harrisburg.

Virginia: Lynchburg, December 19-22. Sec., Dr. R. S. Martin, Stuart.

Illinois March, May and June Reports

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examinations held at Chicago, March 2-4; East St. Louis, May 3-5, and at Chicago, June 20-2, 1911. The number of subjects examined in was 16; total umber of questions asked, 100; percentage required to pass, 5. At the examination held in Chicago, March 2-4, the total umber of candidates examined was 74, of whom 53 passed nd 20 failed. One candidate did not complete the examination. The following colleges were represented:

PASSED College	Year Grad.	Total No. Examined.
University of California	(1910)	1
Bennett Medical College	(1911)	1
Chicago College of Medicine and Surgery	(1911)	27
Coll. of Med. and Surgery, Physio-Med., Chicago	(1910)	1
[illegible] ledical School	(1911)	4
[illegible]	(1909)	1
[illegible]	(1910-1) (1911-13)	14
[illegible]	(1908)	1
[illegible] t. of Med. and Surg.	(1911)	1
[illegible]	(1902)	1
[illegible] Medical College of Pennsylvania	(1905)	1
FAILED		
ennett Medical College	(1909-1) (1910-2)	3
hicago Coll. of Med. and Surg.	(1910-1) (1911-2)	3
ollege of Medicine and Surgery, Physio-Medical, Chicago	(1905) (1910) (1911)	3
enner Medical College	(1907) (1910)	2
ational Medical University, Chicago	(1909)	1
oll. of P. and S., Chicago	(1909) (1910)	2
eliance Medical College	(1909)	1
ush Medical College	(1911)	1
ioux City College of Medicine	(1906)	1
arnes Medical College, St. Louis	(1910)	1
niversity of Pennsylvania	(1906)	1
okio Medical College, Japan	(1905)	1

At the examination held in East St. Louis, May 3-5, *the total* umber of candidates examined was 69, of whom 52 passed, 6 failed, and 1 withdrew. The following colleges were represented:

PASSED College	Year Grad.	Total No. Examined.
College of Physicians and Surgeons, Chicago	(1911)	4
Harvard Medical School	(1911)	1
Univ. of Michigan, Dept. of Med. and Surg.	(1910)	1
Barnes Medical College	(1909-1) (1910-1) (1911-9)	11
St. Louis University	(1910-1) (1911-21)	22
Washington University, St. Louis	(1910-1) (1911-10)	11
Cornell University Medical College	(1910)	1
Miami Medical College, Cincinnati	(1901)	1
FAILED		
Chicago College of Medicine and Surgery	(1911)	1
Coll. of Med. and Surg., Physio-Med., Chicago	(1911)	1
Hahnemann Med. College and Hospital, Chicago	(1890)	1
National Medical University, Chicago	(1911)	1
College of Physicians and Surgeons, Chicago	(1910)	1
Keokuk Med. Coll., Coll. of P. and S.	(1908)	1
University of Louisville	(1908)	1
Barnes Medical College	(1908-1) (1911-2)	3
Homeopathic Medical College of Missouri	(1909)	1
St. Louis College of Physicians and Surgeons	(1907)	1
St. Louis University	(1911)	3
University of Pennsylvania	(1836)	1

At the examination held in Chicago, June 20-22, the total number of candidates examined was 222, of whom 166 passed and 55 failed.[1] One candidate did not complete the examination. *The following colleges were represented:*

PASSED College	Year Grad.	Total No. Examined.
Bennett Medical College	(1911)	9
Chicago Coll. of Med. and Surg.	(1910-1) (1911-16)	17
Coll. of Med. and Surg., Physio-Med., Chicago	(1911)	1
College of P. and S., Chicago	(1910-1) (1911-27)	28
Hahnemann Med. Coll. and Hospital, Chicago	(1911)	7
Hering Medical College and Hospital, Chicago	(1911)	4
Illinois Medical College	(1901)	1
Jenner Medical College	(1910-1) (1911-2)	3
National Medical University, Chicago	(1909)	1
Northwestern Univ. Med. School	(1909-1) (1911-67)	68
Rush Med. Coll.	(1891-1) (1909-1) (1910-1) (1911-18)	21
Keokuk Med. Coll., Coll. of P. and S.	(1906)	1
University of Louisville	(1911)	1
Harvard Medical School	(1901)	1
Omaha Medical College	(1900)	1
University of Pennsylvania	(1910)	1
Royal Hungarian University	(1893)	1
FAILED		
Bennett Medical College	(1910-1) (1911-3)	4
Chicago College of Medicine and Surgery	(1911)	9
College of Medicine and Surgery, Physio-Medical, Chicago	(1908-1) (1910-2) (1911-2)	5
Coll. of P. and S., Chicago	(1910-1) (1911-8)	9
Hahnemann Med. College and Hospital, Chicago	(1911)	2
Hering Medical College	(1910-2) (1911-1)	3
Illinois Medical College	(1910)	1
Jenner Medical College	(1905) (1910) (1911)	3
Northwestern Univ. Med. School	(1910-1) (1911-6)	7
Reliance Medical College	(1909) (1910)	2
Sioux City College of Medicine	(1906)	1
Barnes Medical College	(1910-1) (1911-3)	4
St. Louis College of P. and S.	(1910)	1
University Medical College, Kansas City	(1911)	1
Eclectic Medical College, Cincinnati	(1911)	1
Meharry Medical College	(1908) (1910)	2

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[1] Subject to revision owing to applications for rerating pending.

Louisiana October Report

Dr. A. B. Brown, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Oct. 19-21, 1911. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 36, of whom 20 passed and 16 failed. Two candidates were licensed through reciprocity. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
University of Alabama	(1911)	94
College of Physicians and Surgeons, Little Rock	(1911)	75
Howard University	(1909)	88.4
University of Louisville	(1911)	76.4, 77.8, 79.9
Kentucky School of Medicine	(1908)	84.4
Tulane University of Louisiana	(1911)	83.2
Flint Medical College	(1910)	82.6
Jefferson Medical College	(1910)	89.5
Vanderbilt University	(1911)	88.2
Memphis Hospital Medical College (1907) 75; (1910) 83.3; (1911) 76, 80.6.		
Maryland Medical College	(1910)	*5.9
Baylor University	(1910)	86
University of Texas	(1911)	88.4
Western University, London, Ontario	(1905)	86.6
FAILED		
College of Physicians and Surgeons, Little Rock	(1910)	50.3
University of Louisville	(1909) 70.7; (1910)	69
Flint Medical College	(1910)	72.1
Maryland Medical College	(1910	*5.9

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Bulletin of Johns Hopkins Hospital, Baltimore

November, XXII, No. 249, pp. 383-414

1 Medical Paintings of Velasquez. J. W. Churchman, Baltimore.
2 *Ether Glycosuria. J. H. King, B. S. Chaffee, D. B. Anderson and L. H. Redelings, Baltimore.
3 *Effect of Occlusion of Various Hepatic Vessels on Liver. M. C. Winternitz, Baltimore.
4 Teaching of Experimental Pathology and Pathologic Physiology to Large Classes. R. M. Pearce, Philadelphia.
5 Protest Against Indiscriminate Use of Organic Compounds of Silver in Ophthalmic Practice. S. Theobald, Baltimore.
6 *Jaundice in Pneumonia. F. McPhedran, Baltimore.
7 Abdominal Lipectomy. W. F. Shallenberger, Atlanta, Ga.

2. **Ether Glycosuria.**—The authors' experiments confirm the previous findings in the literature that ether causes a definite glycosuria which may make its appearance as early as twenty minutes after beginning the anesthesia and disappears by the end of twenty-four hours. The reducing property of the urine is due to dextrose. The cause of the glycosuria is a definite hyperglycemia. The liver is the organ which furnishes the increase in sugar to the blood, as shown by the absence of the occurrence of a hyperglycemia and glycosuria when the liver is removed from the circulation by an Eck fistula. Severance of all the splanchnic fibers of the celiac plexus going to the liver did not remove the hyperglycemia and glycosuria elicited by ether.

3. **Occlusion of Various Hepatic Vessels.**—Winternitz found that on account of the extensive anastomosis of the intrahepatic branches of the portal vein and the hepatic artery, occlusion of either of them is usually without effect on the liver parenchyma. The portal vein may be completely occluded and the liver only appear slightly smaller and congested. In these cases an extensive collateral circulation usually establishes itself in the hepatoduodenal ligament and the portal blood is in this way carried to the interlobular vessels. Following occlusion of the portal vein the entire liver, if it is the main branch, or only the part supplied by the occluded vein, may present a much more congested appearance. This is due to the insufficiency of arterial anastomosis which is enough to nourish the liver cells and prevent necrosis, but which allows the blood from the systemic veins to dam back into the liver capillaries. This picture is only produced when the general circulation is impaired. When the smaller interlobular branches of the portal vein are occluded the anastomosis with the hepatic artery becomes ineffectual and there is a total mechanical obstruction of the circulation in the area. This is followed by infarct formation. There is necrosis of the liver cells often accompanied by hemorrhage. The necrosis of eclapmsia belongs to this group. Occlusion of branches of the hepatic artery may result in true infarct formation. This is rare, firstly, on account of its peculiar position at the celiac axis, and secondly because of its abundant anastomoses. Occlusion of both the portal vein and the hepatic artery results in infarct formation unless the process is very gradual. Occlusion of the hepatic vein may bring about a congestion in the zone drained by it or may be absolutely without effect.

6. **Jaundice in Pneumonia.**—McPhedran estimated the corpuscular resistance in fourteen cases of lobar pneumonia with and without jaundice, in order to determine the question as to whether any of these cases might show a diminution of corpuscular resistance. In the fourteen cases there was increased fragility in only one case, this without jaundice; but in the cases with most marked jaundice there was, on the contrary, an increase in the corpuscular resistance. The urine in no cases showed any excess of urobilin. Bilirubin was present in the urine in three of the eight cases with jaundice. Autopsy showed no evidence of special changes in the liver. The blood-counts showed such a loss that one must consider it as due to a sudden great destruction. This loss is probably due to the hepatization.

Pennsylvania Medical Journal, Athens

October, XV, No. 1, pp. 1-84

8 Physician and His Societies, as Found in Pennsylvania. J. B. Donaldson, Canonsburg.
9 Etiology and Surgical Pathology of Impaired Gastric Drainag
L. J. Hammond, Philadelphia.
10 Limitations of Use and Methods of Employing Local Anesth
sia in Rectal Surgery. L. H. Adler, Philadelphia.
11 Puerperal Infection. G. H. B. Terry, Wyalusing.
12 Blood Examination as Aid to Surgical Diagnosis. H. M
Armitage, Chester.

Journal of Missouri State Medical Association, St. Louis

November, VIII, No. 5, pp. 181-224

13 Prevalence of Infantile Paralysis in Missouri. A. O'Reilly, St. Louis.
14 *Etiology and Treatment of Dementia Præcox. G. W. Robinson, Kansas City.
15 *Carcinoma: With Special Reference to Carcinoma of Lip
T. E. Potter, St. Joseph.
16 *Two Cases of Tubal Pregnancy. F. G. Nifong, Columbia.
17 Symptoms Frequently Unrecognized as Being Indicative
Disturbance of Prostate and Verumontanum. J. R. Caul
St. Louis.
18 Pathology of Rectum in Diagnosis and Treatment. W.
Stauffer, St. Louis.
19 Functional Monoplegia. A. L. Skoog, Kansas City.

14. **Dementia Præcox.**—Dementia præcox Robinson regar
as a very common psychosis, occurring in predisposed perso
Such predisposition may be recognized without difficul
Preventive treatment will be very effective, saving ma
patients from developing the dementia; the treatment af
the dementia develops, while not so effective, if properly c
ried out, will restore quite a few to a sufficient degree t
they may be fairly useful citizens.

15. **Cancer.**—Potter emphasizes the necessity of remov
all lymph structures in these cases. He says that the lym
atics should be most thoroughly removed no matter how
back they extend, nor what vessels are in danger of being
in the attempt; to leave them only encourages a more ra
spread of the disease, and the complete removal is of gr
benefit even if there is not a permanent cure.

16. **Tubal Pregnancy.**—These cases are regarded of inte
by Nifong because Case 1 exemplifies the more frequent
early results of tubal pregnancy, rupture, hemorrhage, s
inflammatory reaction and the difficulty of diagnosis; be
easily mistaken for pus tube, appendicitis or other pel
trouble. Case 2 is unusual in that the pregnancy went
full term and labor was unavailing; also in the long pe
elapsing without trouble before surgical intervention.

Journal of Michigan State Medical Society, Battle Cree

October, X, No. 10, pp. 455-510

20 Paranoia and Certain Paranoid Conditions in Relation
Public and Medical Profession. C. B. Burr, Flint, Mich.
21 Progress of Medical Science During Last Thirty-Five Ye
C. J. Ennis, Sault Ste. Marie, Mich.
22 Goiter and Its Surgical Treatment. H. M. Joy, Calumet, M
23 Repair of Perineum. F. Townsend, Sault Ste. Marie, Mi

November, X, No. 11, pp. 511-582

24 Diagnosis of Uncomplicated Ulcer of Stomach. J. T. Pilc
Brooklyn.
25 Cysts of Gaertner's Duct. C. Georg, Ann Arbor.
26 *Relation of Premature Rupture of Amniotic Sac to Puerp
Infection. G. Kamperman, Ann Arbor.
27 Pyelonephritis of Pregnancy. W. F. Metcalf, Detroit.
28 *Blood-Pressure in Eclampsia. W. E. Welz, Detroit.

26 and 28. Abstracted in THE JOURNAL, October 28, 19
p. 1484.

Southern Medical Journal, Nashville, Tenn.

November, IV, No. 10, pp. 725-794

29 **Practical Value of Ross "Thick Film" Method in Diagnosis*
Malaria. W. M. James, Ancon, *Canal Zone.*
30 *Urticaria Edematosa, Following Cutaneous Tuberculin Re
tion in Lupus Erythematous Disseminatus. J. L. Kirb
Smith, Jacksonville, Fla.
31 Treatment of Pulmonary Tuberculosis. F. S. Meara, New Yo
32 Treatment of Pulmonary Tuberculosis by Artificial Pneum
thorax. M. E. Lapham, Highlands, N. C.
33 Intestinal Worms in Examination of One Hundred and Twent
Two Children. N. Evans, Nashville, Tenn.
34 *Delayed Resolution in Pneumonia. J. C. McLeod, Bay Minett
Ala.
35 Stiffness of Spine. T. Toepel, Atlanta, Ga.
36 Complete and Permanent Removal of Septal Spurs. A.
Mason, Atlanta, Ga.
37 Duty of Medical Profession and Public in Prevention of The
Most Common Diseases. J. B. Elliott, Moundville, Ala.
38 End-to-End Anastomosis of Blood-Vessels. G. J. Winthro
Mobile, Ala.

29. **Ross "Thick Film" Method in Malaria.**—This is t
third and concluding paper in the series. The study made
James was a complete one and it is impossible here to quo
more than a few of the points made. James says that
Ross' figures are accepted as approximately correct, and

believes that they should be so taken, it is evident that uncomplicated malaria does not produce fever unless the parasites are present in the peripheral blood in numbers sufficient to be readily demonstrated by the thick film process, provided the search is made intelligently. And it must be true that the organisms will be found in all cases when the fever and other symptoms are severe. We should not, then, with this method at our disposal, attribute to malaria fevers of which the etiology is obscure, since we are able to find the parasites if the illness is due to uncomplicated malaria. That such is the case, James is convinced by the results obtained in the 100 consecutive cases that he studied and by those in several hundred subsequent admissions. He states it as his belief that this method of Ronald Ross will prove of a great practical value to the practitioner as his more famous discovery has been of worth to the sanitarian.

30. **Urticaria Edematosa.**—Four hours after a von Pirquet test was made by Kirby-Smith his patient began to complain of the feeling of "fleas biting;" within eight hours there was a well developed urticaria. The patient had a temperature of 101, chill, marked swelling of the face, eyes closed from the edema, large urticarial weals on the body and extremities, considerable discomfort, restlessness and inability to sleep. The following day the patient was confined to bed, body and extremities covered with large urticarial weals, face considerably edematous; had developed a cough of a dry character, some temperature present; patient suffering considerably from the subjective symptoms of the rash; itching and burning sensations severe. After having used a lotion of calamine and oxid of zinc some comfort was obtained. On the third day the urticarial symptoms, which had seemingly abated, now became active again, with new lesions appearing. After a few hours there was a general decline in the intensity of the rash, but not for a week did all the lesions disappear.

34. **Delayed Resolution in Pneumonia.**—In the two cases cited by McLeod resolution was delayed for eight and sixteen weeks, respectively.

Journal of Indiana State Medical Association, Ft. Wayne

October 15, IV, No. 10, pp. 419-468

39 Necessity for Medical Cooperation. F. C. Heath, Indianapolis.
40 *Tuberculin and Autogenous Vaccines in Treatment of Pulmo- T. Pettit, Ottawa, Ill.
41 . Potter, Indianapolis.
42 * in Treatment of Open or Surface Forms of Tuberculosis. T. J. Beasley, Danville, Ind.
43 Cutaneous Blastomycosis. M. A. Austin, Anderson, Ind.
44 Some Common Errors in Treatment of Mental Diseases. C. W. Sawyer, Marion, Ohio.

40 and 42. Abstracted in The Journal, October 21, 1911, pp. 1391 and 1392.

Annals of Surgery, Philadelphia

November, LIV, No. 5, pp. 577-720

45 Acute Hematogenous Infection of Kidney. F. J. Cotton, Boston, Mass.
46 Malignant Papillary Adenoma of Kidney. J. B. Squier, New York.
47 Polyp of Urinary Bladder in Thirteen Months' Old Child. I. S. Koll, Chicago.
48 *Intraperitoneal Operation for Extensive Carcinoma of Bladder with New Method of Treating Divided Ureter. P. M. Pilcher, Brooklyn.
49 Splenectomy for Rupture of Spleen. J. C. McCoy, Paterson, N. J.
50 Prolapsed Spleen with Acute Torsion; Splenopexy. F. H. Lahey, Boston.
51 Cysts of Omentum. C. N. Dowd, New York.
52 Cirrhosis of Stomach (Linitis Plastica). H. H. M. Lyle, New York.
53 *Extensive Removal of Intestine. J. D. Whitall, Philadelphia.
54 Right Inguinal Hernia Following Appendectomy. J. P. Hoguet, New York.
55 Fracture-Dislocation of Atlas. F. L. Carson, Shawnee, Okla.
56 *Muscle Grafting for Gunshot-Wound of Shoulder. B. B. Cates, Knoxville, Tenn.
57 Impacted Fractures Through and Near Femoral Neck. V. Z. Cope, London.
58 *Catgut Sterilization. W. H. Hutchings, Detroit.
59 Treatment of Lacerated and Incised Wounds of Extremities. J. A. Kelly, Philadelphia.
60 Obesity and Its Surgical Treatment by Lipectomy. H. E. Castle, San Francisco.

48. **Carcinoma of Bladder and Ureter.**—The operation employed by Pilcher was as follows: Incision from umbilicus to symphysis; peritoneal cavity opened. Trendelenburg posture; pelvis emptied of intestines and protected by gauze pads; bladder widely opened in the median line and growth well exposed. Using scissors, the bladder wall which was involved was detached from the healthy bladder wall down to the urethral opening and the left ureter opening. At the point of exit of the left ureter it was found that the growth was superficial, having extended along the mucous membrane without involving the deeper structures. It had not apparently extended into the lumen of the ureter. The mucous membrane, the submucous structures, and a portion of the muscular tissue surrounding and underlying the left ureter opening including all of the tissues involved in the malignant growth, were freed and dissected up, the ureter itself not being cut across. By using traction on the flap which had been separated, it was found that the ureter was loosened from its sheath within the bladder wall and could easily be pulled down through the bladder wall. In this particular case over 2 inches of normal ureter were drawn through the bladder wall into the interior of the bladder. The ureter was cut across in situ, about 1 inch from its ostium, and allowed to slip back into place, the lumen cut across and the end split up about ¼ inch to avoid narrowing the outlet by cicatricial contraction. After all the cancerous tissue had been removed, including much of the surrounding tissues beneath the symphysis, a portion of the anterior vaginal vault and all but a section of the urethral orifice, the bladder was reconstructed. The vesicovaginal opening was not closed and a rubber drainage tube was led through it from the bladder to the vagina. The anterior and lateral walls were brought together first by a running Connell suture of catgut and reinforced by a running Lembert suture of catgut. The intraperitoneal portion of the bladder was closed by a separate suture and reinforced a la Mayo. The peritoneal cavity was closed without drainage. The left kidney discharged its urine via the left ureter, then through the ureterovesical fistula into the bladder. The patient made an uneventful operative recovery. There was no leakage of urine excepting through the vesicovaginal opening. The leakage per vaginam ceased about the sixteenth day.

53. **Extensive Removal of Intestine.**—Whitall reports a case of recovery after resection of 10 feet 8 inches of the ileum which had been stripped of its mesentery and was caught in a perforation in the fundus of the uterus.

56. **Muscle Grafting for Gunshot Wound.**—In this case Bates removed the ankylosed and carious head of the humerus and resected an inch or more of the shaft; then loosened the insertion of the coracobrachialis and the anterior half of the deltoid and sutured them with several strands of catgut to the freshened upper end of the biceps muscle. In order to lessen tension on the sutures the arm was kept in hyperflexion. For carrying purposes this arm is as strong as the sound arm.

58. **Catgut Sterilization.**—The method employed by Hutchings is as follows: Raw catgut without any previous treatment is placed in suitable containers which are left open. These tubes are then placed in an ordinary vacuum desiccator the bottom of which is covered with sulphuric acid and connected with a vacuum pump. The air is then exhausted until a pressure of less than 4 mm. is secured, the more perfect the vacuum the better the result. When this is attained the desiccator is closed, disconnected from the pump and set aside. Eight days are long enough to secure dryness. At the end of this time air is allowed to enter the desiccator. If perfectly dry air is needed it can first be passed through Wolff bottles containing sulphuric acid. The tubes are then rapidly sealed and are ready to sterilize. Any method of heating may be employed. Hot-air ovens have been found uncertain, as it is very difficult to regulate the temperature. In his work Hutchings has employed a mixture of glycerin and distilled water with a boiling point of 150 C., the container being fitted with a reflex condenser. The sealed tubes are placed in this and boiled two hours, thus securing two hours of dry heat at 150 C. In order to test the sterilization of gut prepared in this way, the following experiments were undertaken: Number 4 catgut was cut in 1½-inch lengths and placed in 250 c.c. Erlenmeyer flasks, containing suitable culture media.

temporary relief, large amounts of fluid and great volumes of gas escaping. Eight hours after the initial attack, the lower border of stomach was thought to be in the right iliac fossa. Next morning the distention began to decrease, and all the acute symptoms disappeared within the following forty-eight hours. With the decrease of the distention, the patient's condition soon returned to the normal. Within a short time the hernia recurred. He was readmitted to the hospital and the hernia repaired under ether anesthesia. The smooth recovery following this operation was in marked contrast to the stormy convalescence of the previous one.

Journal of Medical Society of New Jersey, Orange

October, VIII, No. 5, pp. 229-282

127 Splenectomy for Rupture of Spleen; Four Cases. J. C. McCoy, Paterson, N. J.
128 Some Diseases of Gall-Bladder. F. M. Donohoe, New Brunswick, N. J.
129 Advantages of Autopsy and Other Pathologic Anatomic Examinations. H. S. Martland, Newark, N. J.
130 Edemas Occurring Without Albuminuria in Infancy. D. J. M. Miller, Atlantic City, N. J.

Bulletin of Manila Medical Society

September, III, No. 9, pp. 153-165

131 *Incidence of Placenta Prævia in Manila With Report of Twenty-Two Cases. H. A. Sison, Manila.

131. **Placenta Prævia.**—Of the twenty-two cases here reported, seven had previous abortions and of the nineteen cases that were examined, fifteen had retroversions and three had previous subinvolutions. Of the four primipara examined all had retroversions. Sison says the majority of the single women examined in the gynecologic dispensary of the Philippine General Hospital have retroversions. The frequent occurrence of retroversions in young Filipino girls, especially in the lower classes, is probably accounted for by the usual custom of allowing girls of 7 to 10 years of age to be the nurses for their young brothers and other relatives. These children also often have responsibilities of housework, carrying heavy baskets to the market and attending the younger members of the family.

Woman's Medical Journal, Cincinnati

October, XXI, No. 10, pp. 213-236

132 Serum Reaction in Diagnosis of Syphilis. J. W. Fisher, Middletown, Conn.
133 Eugenics or Deficiency. I. T. Smart, New York.
134 Vesico-Vaginal Fistula. A. Conklin, Chicago.
135 Chronic Dyspepsia. J. T. Pilcher, Brooklyn.

Boston Medical and Surgical Journal

November 9, CLXV, No. 19, pp. 709-746

136 Biologic Basis of Specific Therapy. S. Flexner, New York.
137 Association of Mental Symptoms With Contusions of Eye. E. R. Williams, Esmont, Va.
138 Vincent's Angina. E. H. Place, Boston.
139 *Epithelioma: Irritation as Cause. J. A. Honeij, Boston.

139. **Epithelioma.**—Out of a group of 150 patients seen by Honeij, 32 per cent. gave a positive history of irritation to some benign growth or injury to the normal epithelial surface.

American Journal of Medical Sciences, Philadelphia

November, CXLII, No. 5, pp. 625-780

140 *Tricuspid Stenosis, Report of Five Cases. T. B. Futcher, Baltimore.
141 *Operability of Intramedullary Tumors of Spinal Cord. C. A. Elsberg and E. Beer, New York.
142 Acute Phlegmonous Gastritis Due to Streptococcus Pyogenes. W. S. Baird. Montreal.
143 *Cardiac Murmurs During Attacks of Biliary Colic. D. Riesman, Philadelphia.
144 *Human Trypanosomiasis. C. N. B. Camac, New York.
145 Experience With Pulmonary Tuberculosis During Last Year. S. G. Bonney, Denver.
146 *Perforation of Intestines Due to Tuberculous Ulceration. J. M. Cruice, Philadelphia.
147 Prenatal and Infantile Tubercular Predispositions. J. B. Huber, New York.
148 *Leukocytic Picture in Pulmonary Tuberculosis. M. Solis-Cohen and A. Strickler, Philadelphia.
149 *Normal Differential Leukocyte Count. C. H. Bunting, Madison, Wis.
150 *Blood in Disease Commonly Called Nervous Disease. J. Collins and D. M. Kaplan, New York.
151 Case of Banti's Disease: Splenectomy Followed by Typhoid and Appendicitis. J. Fuhs, Brooklyn.
152 Some Phases of Spastic-Paretic Syndrome of Cerebral Diplegia. L. P. Clark, New York.
153 *Atherosclerosis, With Special Reference to Physiologic Development and Pathologic Changes in Intima. W. E. Sanders, Baltimore.

140. Abstracted in The Journal, June 17, 1911, p. 1851.

141. **Operability of Intramedullary Tumors of Spinal Cord.**—Based on the anatomic grounds the authors suggest the following method of treatment for intramedullary tumors of the cord. If after laminectomy and incision of the dura the surgeon finds that he has to deal with a localized intramedullary growth, he should make a small incision, about 1 cm. long, in the posterior median column a few millimeters outside of the posterior median fissure, at the spot where the growth seems to be nearest the surface of the cord. The incision should be deep enough to cut the pia and the substance of the column down to the tumor. The tumor will then begin to bulge through the incision. No matter how markedly the tumor will seem to bulge, the surgeon must not attempt to remove the growth, for he will be sure to cause grave injury to the cord. He must leave it to Nature to extrude the tumor. As the normal intramedullary pressure will tend to readjust itself, the growth, which has caused an increased pressure, will be gradually pushed out of its bed. Nature will do this by a slow and gradual process and the tumor will be slowly extruded, with a minimum of injury of nerve fibers. Therefore, after the small incision into the cord has been made, the muscles and skin must be closed and the actual removal of the growth left to a second operation. After about one week the wound is reopened and the tumor, which will in all probability be found outside of the cord, can be removed by dividing the few adhesions which remain. If the manipulations are done with delicacy and care, no injury should be done to the cord substance. When the tumor has been removed, the pia should be closed by fine silk sutures and the dura, muscles and skin sutured in the usual manner. In the case of intramedullary tumors which extend over a large number of segments and which infiltrate the cord substance, a small incision into the cord made in the manner above described at the level of the most marked symptoms, may allow of the partial extrusion of the tumor, with perhaps amelioration of the symptoms. It is not at all beyond the range of possibility that some cases of spinal gliosis, syringomyelia and hematomyelia will come into the domain of the surgeon. It is perfectly feasible to drain a central cavity in the cord into the subdural space and perhaps prevent the symptoms due to pressure of the fluid on the nerve fibers. In the same way it may be possible to benefit certain cases of hematomyelia by allowing the blood-clot to be extruded from the substance of the cord. The authors term this method of treatment the "extrusion of intramedullary tumors."

143. Abstracted in The Journal, June 10, 1911, p. 1753.

144. **Human Trypanosomiasis.**—Camac reports a case where the patient survives more than four years after the disease was diagnosticated.

146. **Perforation of Intestines.**—It is claimed by Cruice that perforation of the intestines in chronic pulmonary tuberculosis occurs in from 1 to 5 per cent. of cases. It is possible to diagnosticate complete perforation in only a limited number of cases. It is only possible to diagnosticate local abscess due to perforation when the mass can be felt, but it is never possible to diagnosticate with certainty a partial perforation.

148. **Lymphocytes in Tuberculosis.**—Improvement in pulmonary tuberculosis according to these authors is associated with an increase in the proportion of lymphocytes in the blood at the expense of the polymorphonuclear cells. As the patients grow worse the proportion of polynuclear cells increases at the expense of the lymphocytes. None of the other types of white cells is affected by either condition. As a consequence, the percentage of lymphocytes will usually be less and the percentage of polynuclears will be greater the more advanced the disease and the greater the amount of lung tissue involved. As a patient begins to improve there is usually an increase in the proportion of polynuclear cells containing one and two nuclei, the increase often being maintained for several weeks, but not indefinitely. Mononuclear, transitional and eosinophil cells are unaffected by the stage, extent, or progress of the disease. The leukocytic picture in pulmonary tuberculosis corresponds with the patient's resistance to the disease rather than with the extent of the lesion.

By means of the leukocytic picture it is often possible to determine the resistive power of a tuberculous patient and to form a fairly accurate estimate of the chances for recovery.

149. **Normal Differential Leukocyte Count.**—The average of the total counts made by Bunting is 7,580, while 60 per cent. of the cases lie between 6,000 and 8,000, with a minimum of 5,000 and a maximum of 12,000. Of the neutrophils, 60 per cent. of the counts lie between 50 and 60 per cent., with the remaining 40 per cent. almost equally divided between those above 60 per cent. and those below 50 per cent. The average of the counts is 54.6 per cent. Further, 60 per cent. of the small mononuclears lie between 30 and 40 per cent., with 30 per cent. of the counts below 30 per cent., and but 10 per cent. above 40 per cent. The average is 33.1. Eosinophils range from 0.8 to 9.6 per cent., with an average of 3.2 per cent., with 25 per cent. of the counts below 2 per cent., 25 per cent. between 2 and 3 per cent., 25 per cent. between 3 and 4 per cent., and the other quarter above 4 per cent. Basophils range from "none seen in counting 500 cells" to 1.8 per cent.; the average being 0.8 per cent., and 40 per cent. of counts showing more than 1 per cent. The large mononuclears vary from 0.4 to 3.6 per cent. with an average of 1.6 per cent. The transitionals are about the most constant in percentage, 66 per cent. of the counts lying between 6 and 8 per cent., with but one count below 6 per cent., and but three above 9 per cent., the average being 7.4 per cent.

150. **Blood in Nervous Disease.**—The authors point out the importance that the study of blood conditions had in leading them to correct diagnosis in five cases of so-called nervous disease.

153. **Atherosclerosis.**—Sanders' paper is based on the microscopic study of the vascular system of twenty cases selected from about 300 autopsies. The author claims that many of the cells observed in the fissures and clefts of the elastica interna, in the smaller vessels, are muscle-cells and occupy an analogous position to the longitudinal muscular layer of the aorta. The fatty spots so commonly observed on the intima bear no actual or causal relation to atherosclerosis. They invariably begin in the superficial layer of the intima and are usually a manifestation of infection. Sanders believes that this type of sclerosis is invariably the expression of senility and very rarely occurs before the fifth decade of life. Its earliest manifestations begin, invariably, in the intima and are characterized by a hyperplasia of its connective-tissue layer and also its deeper elasticomuscular layer, the latter subsequently undergoing degeneration of both its cellular and elastic elements. It is impossible to say whether the fatty degeneration of the elastic fibers begins in the fibers themselves or in their cement substance. The primary causes of atherosclerosis is an exhaustion of the elasticity of the elastic tissue in the vessel wall, and the hyperplastic changes in the intima are compensatory. There is no histologic evidence of a primary involvement of any elements in the media and a fatty degeneration of the elastic fibers of this tunic is very rarely seen. No one has been able to produce atherosclerosis experimentally.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

October 28, No. 2652, pp. 1053-1144

1 Medical Education, Past and Present. R. Saundby.
2 Clinically Obscure Malignant Tumors of Nasopharyngeal Wall. W. Trotter.
3 Deviations of Nasal Septum and Submucous Resection Operation. J. W. Wood.
4 *Case of Tonsillar Calculus. J. M. McCarthy.
5 *Treatment of Pulmonary Tuberculosis by Inducing Artificial Pneumothorax. H. Rhodes.
6 Mechanical Effects of Massive Left-Sided Pleural Effusion. N. C. Rutherford.
7 *Creatin and Creatinin in Animal Metabolism. W. H. Thompson and T. A. Wallace.
8 *Treatment of General Septic Peritonitis. R. Morison.
9 Gastroscopy: Plea for Its Routine Employment by Gastric Experts. W. Hill.
10 *Inquiry into Value of Sterilization of Skin by Iodin. C. Leedham-Green.
11 Two Cases of Sarcoma: Treatment by Radium. G. S. Ryerson.
12 Technic of Wound Treatment. A. Thomson.
13 Fibromatous Tumors of Mesentery. W. J. Greer.
14 Treatment of Fracture of Carpal Scaphoid and Indications for Operation. A. MacLennan.
15 Operation for Abdominal Aneurysm, with Preliminary Report of Two Cases. W. I. de C. Wheeler.
16 *Further Series of Eighty-One Consecutive Cases of Cleft Palate Treated by Operation. J. Berry.
17 *Tuberculous Mesenteric Glands and Abdominal Conditions They May Give Rise To. G. P. Newbolt.
18 Some Functions and Surgical Uses of Omentum. D. P. D. Wilkie.
19 Appendicitis Without Physical Signs. H. J. Paterson.

4. **Tonsillar Calculus.**—The size of the calculus in McCarthy's case was unusual. The stone measured 2.5 cm. in length, 2.5 cm. in breadth and about 1.5 cm. in depth and weighed 4.635 grams (71.59 grains). Chemically it consisted for the most part of calcium phosphate with a fair admixture of calcium carbonate and a trace of magnesium phosphate.

5. **Artificial Pneumothorax in Pulmonary Tuberculosis.**—Rhodes uses Brauer's method because his experience and observations have convinced him that this method seems to offer a greater chance of success, and, on the whole, less danger to the patient.

7. **Creatin and Creatinin in Animal Metabolism.**—The authors believe that Folin overlooked the significance of his results and that the retention of creatin, whether given with food or formed in the body, is mainly connected with carbohydrate metabolism. In three cases examined by them there was an excretion of creatin in the urine, apparently increasing with the severity of the glycosuria. There was also a marked diminution in the output of creatinin. In a mild case of diabetes the addition of creatin in 1-grain doses to the food had no pronounced effect on the output of sugar, whereas the administration of creatinin in doses of 0.15 to 0.18 gram, whether hypodermically or with the food, temporarily increased the output of sugar by nearly 50 per cent. From this a practical point arises, namely, that soups, meats and meat extracts liable to contain creatinin should not be given with the diet.

8. **Treatment of General Septic Peritonitis.**—The various forms of treatment proposed for this condition are reviewed by Morison.

10. **Value of Sterilization of Skin by Iodin.**—Leedham-Green gives the results of his tests as follows: The simple spirit proved to be decidedly inferior to the iodin and sublimate alcohol. These two clearly showed themselves to be powerful skin disinfectants. A true sterility of the skin was, of course, never obtained, but both methods always greatly reduced the infectivity of the area, even when it had been previously grossly contaminated. When both skin and silk thread were dry the result was distinctly good, the majority of the tubes remaining sterile. But when the thread was wet and still more when the skin was tested after being moistened with sterile saline or albuminous fluids, the results were disappointing. In an unpleasant proportion of cases the skin proved to be still surgically infective and this was so when it had not been previously artificially infected. Neither of the two methods can be said to guarantee sterility and the skin, which had proved to be practically sterile directly after the process of disinfection, gradually became more and more infective as, under the influence of fluid, the hardened epithelium became loosened. Up to the present (for the experiments are still going on) sublimate alcohol has given the better results. There was a slight superiority even when it was merely painted on the skin like the iodin; when it was freely rubbed on, as in the usual method of alcohol disinfection, the superiority was more marked and at times pronounced.

16. **Cleft Palate Treated by Operation.**—Berry performs the Langenbeck operation. Of the fifty-nine cases in which the hard palate was involved as well as the soft, union of the soft palate occurred fifty-eight times after the first operation. The fifty-ninth case was one of complete double cleft of the whole palate operated on at fourteen months; after the second operation union took place. Of twenty-one cases of cleft limited to the soft palate, complete union after the

DIAGNOSIS AND PROGNOSIS

The diagnosis is made entirely on the finding of the organism in the feces and the absence of other intestinal protozoa.

Prognosis is not good even in the very early stages of the disease. As the infection progresses, it becomes rapidly worse and in the later stages, when the stool is distinctly dysenteric in character, the prognosis may be pronounced in most cases hopeless.

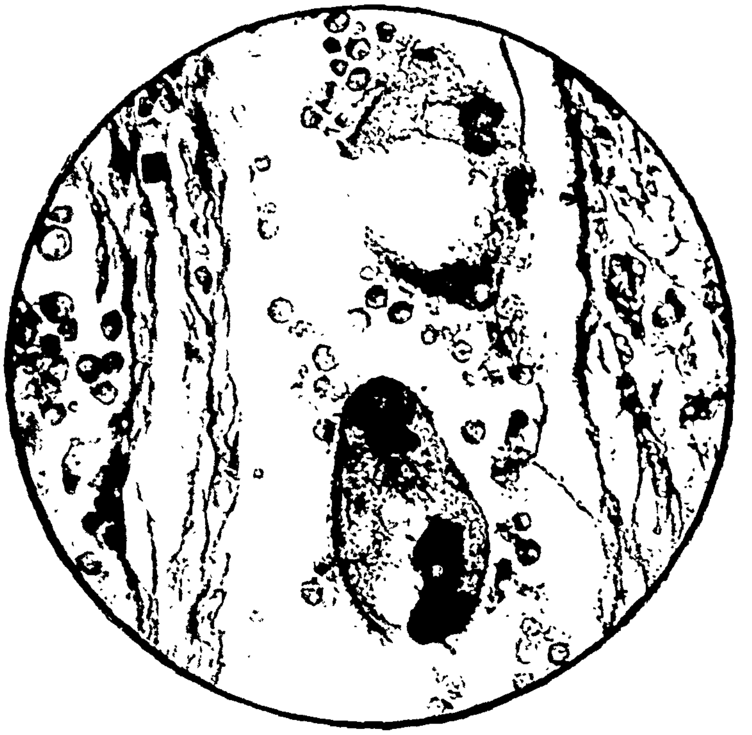

Fig. 5.—Balantidia in a blood vessel.

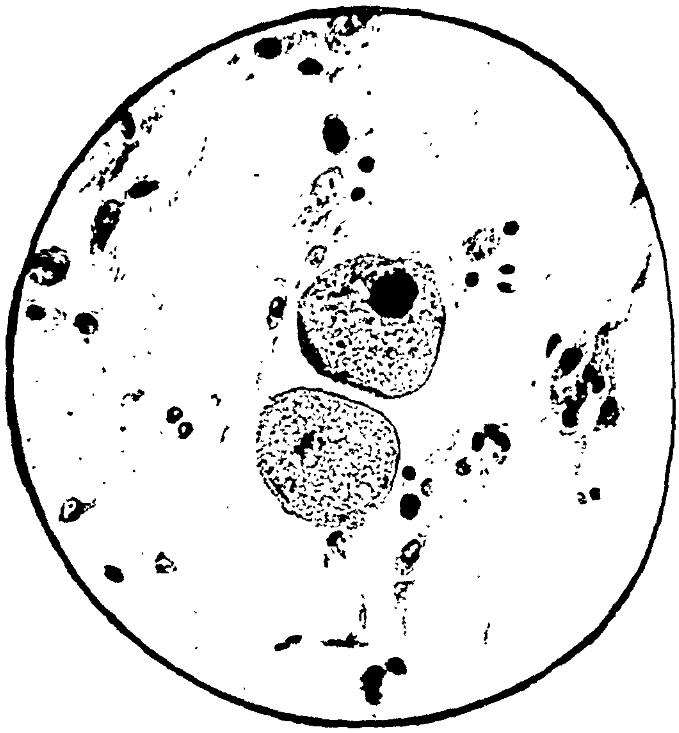

Fig. 6.—Two organisms in submucosa causing practically no cell reaction.

GROSS PATHOLOGY

In my cases the ulceration caused by this parasite has been limited almost entirely to the colon and rectum. In one case only, a few shallow ulcers were found a few centimeters above the cecum and in most, if not all, of the cases in the literature, the small intestine has been unaffected. The cecum may be greatly thickened where the most severe and chronic ulceration is present. In two of my cases, in some places it was as much as 3 cm. in thickness, and the rectum and part of the colon was a mass of ulcerating necrotic tissue.

The ulcers vary in size from 0.5 cm. to 3 or 4 cm. in diameter. They bear no distinct relation to the mesenteric attachment. The early ones are shallow, not injected at the edges and are not undermined. From the larger and older ulcers hang tags of black necrotic tissue and the edges are undermined, indurated and injected. The base may be thin, only the serosa intervening between the bowel lumen and the peritoneal cavity. In one of my cases, perforation had taken place in one of the ulcers of the cecum.

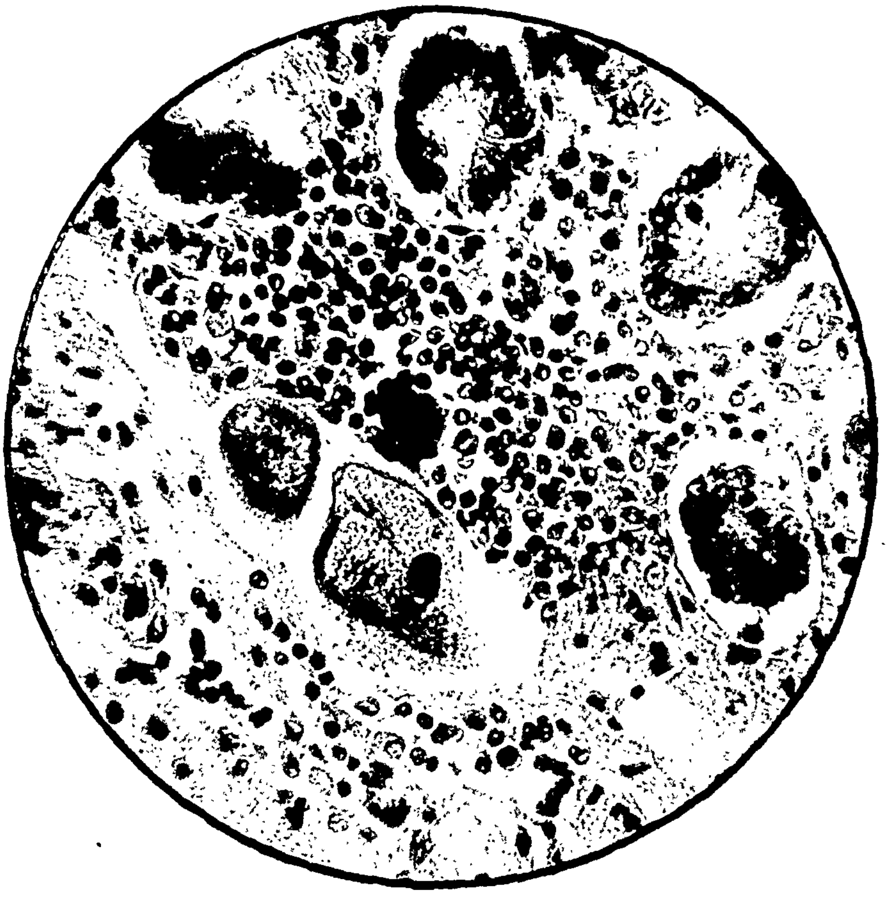

Fig. 7.—Two balantidia lying just beneath the mucosa. Numerous round cells may be seen, with evidence of beginning ulceration.

There is nothing to distinguish the late ulcerations caused by amebas from those caused by the *Balantidium coli,* though the early amebic ulcers appear to be sometimes more punctate in character.

The mesenteric lymph-glands may be enlarged and necrotic.

HISTOLOGIC EXAMINATIONS

The parasites are found in all the layers: mucous, submucous and muscular. They seem to be much more numerous in the submucosa than elsewhere, and in the blood-vessels. "nests" of them with twenty or thirty organisms massed together may be found. Some of them are found in the glands of Lieberkühn, and Strong has demonstrated a parasite rupturing the basement membrane and passing through the gland-wall. Where many of them are gathered together in the subglandular tissue, a surrounding zone consisting of plasma-cells and nphocytes is found, with an abnormal number of sinophils, but with very few polymorphonuclear leuko- tes present. On the other hand, the cellular constitu- ts of the necrotic material covering the ulcer consist rgely of polymorphonuclear leukocytes. This fact ould seem to indicate that the parasite, on first entering e tissue, causes a low-grade inflammation independent any bacteria which it may have carried with it. The testinal bacteria are the terminal invaders and cause ecrosis of the tissue already undermined and weakened the balantidia. Undoubtedly, many of the primary cers are caused by organisms entering the glandular yer, but, having once entered, ulceration may be the esult of another process. On studying sections quite emote from any ulceration and through apparently ninjured mucosa, the organism may be found invading e submucosa and muscular strata, while in the mucous yer none are found. Where they are found singly, here may be no evidence of inflammatory reaction, but, n other areas where several of them are gathered ogether, there may be many round cells forming a surounding zone, and in still other situations marked evilence of inflammatory reaction. In a study of many ections, all stages in this inflammatory process may be een. From the single balantidium which seemingly has ushed itself mechanically through the tissue with little ell reaction, to groups of the parasites with surrounding ones of lymphocytes and plasma-cells which have infilrated the mucosa itself, demonstrating a reaction which, with the invasion of intestinal bacteria, will terminate in ulceration.

The organisms may enter the mesenteric lymph-glands and cause necrosis. In one of my cases, they were found very numerous in one of the sectioned glands and there was some increase in the polymorphonuclear elements present, but no bacteria could be demonstrated and there was no evidence of tuberculosis. If the organism can invade the mesenteric lymph-glands, invasion of the lungs and liver would seem much more probable.

In two of my cases, the marked adhesive pleuritis and pericarditis was very striking and, in view of the fact that there was no evidence of tuberculosis, the *Balantidium coli* may have been the primary invader causing these conditions, though sections from the diseased pleura and pericardium failed to show any organisms present.

ANIMAL EXPERIMENTS

In view of the fact that an epidemic of dysentery due to *Balantidium coli* in orang-outangs had been reported by Brooks,[2] and Noc[3] had reported a natural infection in a monkey (*Macacus cynomolgus*), it was decided to attempt to infect monkeys.

Feces containing many organisms from a case of balantidium infections were injected into the rectum of a monkey (*Macacus cynomolgus*) on several occasions, but the stool always remained negative and no symptoms of dysentery developed. This was done many times with different monkeys, always with negative results.

A colotomy was performed on another monkey and 20 c.c. of infected feces injected on two occasions, but the stool examinations always remained negative.

A section of a colonic ulcer from one of my cases was securely sutured in the wall of the colon of a monkey, in the hope that resting or encysted forms might be present which would be more resistant to manipulation incidental to the changing of the host. No infection of the animal occurred. As to cultivation, in this laboratory we have been unsuccessful. I have observed the organism alive for twenty-four hours on Musgrave and Clegg's media, and Walker (in this laboratory) has noted life for six days, but with no reproduction, those alive being some of the individuals originally inoculated on the media.

SUMMARY AND CONCLUSIONS

Whether a break or abrasion in the mucosa of the intestine is necessary for the entrance of the *Balantidium coli*, whether it can force its way through the lining membrane by purely mechanical means or whether a cytolytic ferment is liberated, we do not know. Once it has entered, its progress is limited only by the length of the colon.

The *Balantidium coli* is a parasite which, though not so wide-spread as the ameba, in individual cases is equally serious in its effects. It does not live in the intestine in a state of harmless commensalism, but causes a dysentery which in its late stages is not amenable to medication and usually results in death.

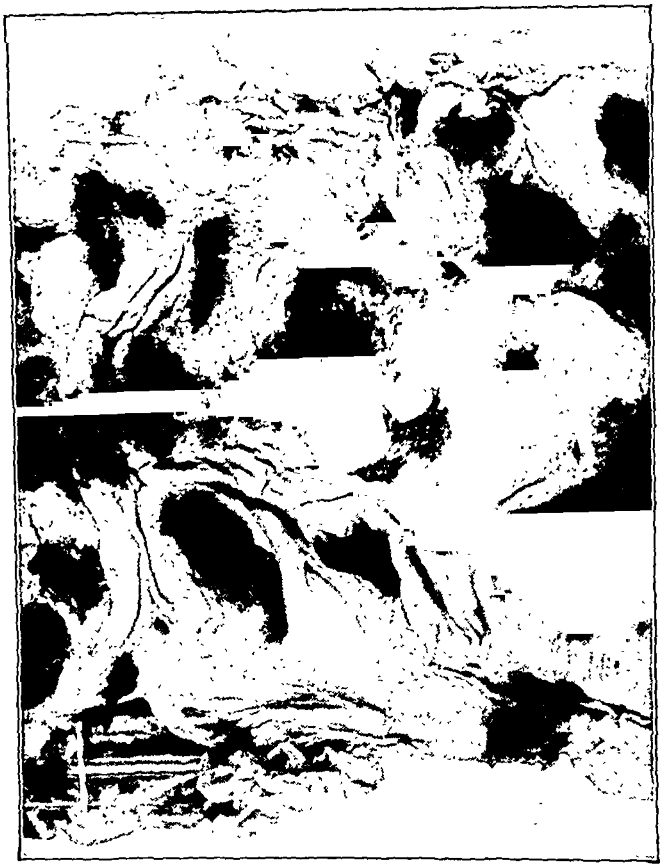

Fig. 8.—Ulceration of colon caused by *Balantidium coli*.

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[2] Brooks: New York University Bull. Med. Sc., 1902.
[3] Noc.: Compt. rend. Soc. de biol., 1910, lxiv. 878.

Sanatorium Treatment of Tuberculosis.—Two points are frequently referred to by C. D. Parfitt in his discussion (*Dominion Medical Monthly*) of the sanatorium treatment of tuberculosis, namely: the crowding of sanatoriums with patients who, because of severe illness, properly belong to a hospital, and the need of efficient organization for consistent supervision of all details of life of the patients. Also, he points out that an organization reasonably efficient for the needs of an institution which treats only a recoverable class of patients, may be quite inadequate to attend properly to either class of patients when the classes are mixed to the degree that obtains at present.

MEDICAL TREATMENT OF THE PATIENT BEFORE OR AFTER THE CATARACT OPERATION *

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It can be said with much truth, that the surgical treatment of the cataract patient has so absorbed the attention of the profession that the medical treatment has been a secondary consideration. Generally, little attention has been given to the patient's physical condition for the most delicate operation of surgery. My purpose is to emphasize the importance of medical treatment for certain types of these patients.

It should begin a week or more before the operation so that the general health shall be at its best, and the eye itself and its adnexa shall be in such a condition that purulent infection from dacryocystitis or from different forms of conjunctivitis may be avoided.

It is a great mistake to underestimate the importance of thorough preparation of the patient for such an operation.

A patient with senile cataract is not likely to be in a good state of health, because as a rule, he is advanced in years, leads a sedentary life, and the ravages of disease and the attributes of age have made him a wreck of his former self. While age, *per se*, cannot be regarded as a cause of cataract, certain nutritive tissue changes often associated with arteriosclerosis and fibrosis to which Metchnikoff[1] attributes the oncoming of age, are characteristic of this time of life, and these conditions probably predispose to cataract.

The average age of cataract patients in India according to Hirschberg is 42 years; in America the average age is 62½ years, and fat, gouty and rheumatic patients are often encountered in America and are the *bête noire* of ophthalmologists.

A cataract patient should be free from bowel and bladder trouble, cough, dyspnea, dacryocystitis, chronic nasal disease, blepharitis, chalazia and styes. The patient should be in a hospital from twenty-four to forty-eight hours before the operation, or long enough to allow the attendant to make an estimate of the physical condition, to unload the bowels, also to examine the urine, and the intra-ocular pressure with the tonometer, to note the blood-pressure and the condition of the arteries, and if blood-pressure is high, e. g., above 220 mm., to reduce it if possible below 190. Personal experience has proved the value of information furnished by these examinations. The individual should have been on a light diet for several days, and should have had a good night's rest before the operation. If nervous, he should have from 30 to 40 grains of sodium bromid, and 10 to 15 grains of sulphonethylmethane (trional) or veronal early in the evening, or, if his condition demands it, he may be given morphin and scopolamin, and in extreme cases an anesthetic at the time of the operation; but usually comforting assurance that all will be well is all that is needed.

This is not a large subject, so far as conditions before operations are concerned, because most of these patients have been under the care of the family physician or have consulted the specialist, who has already given them the necessary preliminary treatment. Most of these conditions need only to be referred to; their treatment is self-evident.

But there remains a class of cataract patients in whom non-purulent infections cannot be traced to any of the conditions or diseases which I have named, and therefore, are not of exogenous origin, but originate within the body of the patient. These are cases so often associated with the so-called rheumatic and gouty diathesis, of which we know so little and which we incriminate so much, and while they are of importance before the operation, they are thought to assume their most important rôles as postoperative expressions of the state or condition generally associated in the mind of the profession with faulty metabolism and auto-intoxication.

Of the agricultural people of the Punjab, who make up about four-fifths of the cataract patients at Smith's clinic, the men are tall, muscular and do not carry any superfluous fat. They live chiefly on a rice-milk diet with a few vegetables and very little meat, and consume very little alcohol. As a rule they work long hours and have insufficient food, and they perspire freely under the rays of the tropical sun. Limited diet and active elimination by the skin are not favorable to the development of faulty metabolism and acid auto-intoxication.

Just what influence this may have in preventing postoperative complications we may not know definitely, but the comparative absence of complication following cataract operations among Indians is more than suggestive. On the other hand, among obese and sedentary American patients the conditions which seem favorable for auto-intoxication are more often found, and it is my observation that this latter class furnishes the chief contingent of non-suppurative postoperative troubles.

Axenfeld,[2] speaking of metastatic ophthalmia, a somewhat kindred subject, has said:

> Although purulent inflammations only differ from non-puru lent in degree, and although we know that the causal agent of the former under special conditions can cause non-purulent serous, or plastic inflammations, yet the purulent hematogen ous inflammations arising in the eye can be put into a specia class, for we know with certainty that in every case pyogeni organisms have settled down in the affected part of the ey We cannot infer in an endogenous purulent inflammation, t the toxins, which were circulating in the blood, have settle down at one spot; the hypothesis that such a microbe- metastatic ophthalmia exists is quite without proof.

At the Boston meeting of this Section in 1906, de Schweinitz[3] presented a paper entitled "Auto-Intoxication in Relation to the Eye."

At the Chicago Session in 1908, de Schweinitz and Fife[4] presented another paper, entitled "A Further Contribution to the Possible Relation of Auto-Intoxication to Certain Diseases of the Cornea and Uveal Tracts." These papers can be read to great advantage in connection with the subject, as they undoubtedly show an association, if not a relation between auto-intoxication and certain postoperative complications.

I am convinced, from personal experience, that the comparative infrequence of postoperative complications in Smith's clinic in India is due, first, to the thoroughness of his operation which excludes capsular remains and cortical débris and an after-cataract (prolific sources of after-troubles in the regular cataract operations), and second — perhaps of more importance from a medical standpoint — to the diet, age and physical condition already referred to.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

[1] Metchnikoff: The Nature of Man.

[2] Bacteriology of the Eye, p. 364.

[3] The Journal A. M. A., Feb. 9, 1907, p. 502.

[4] The Journal A. M. A., June 20, 1908, p. 2040.

Why postoperative complications occur, or in what they consist, or why one person should escape them and another not, under apparently similar conditions, *we do not know*, however much we may suspect auto-poisoning. But the fact remains that these complications exist, and that short, red-faced, thick-necked, heavy-set, fat persons, whose weight is out of proportion to their height, who eat and drink excessively and lead sedentary lives, and who are of the so-called bilious, gouty or rheumatic type are prone to have postoperative reactions and, therefore, are not good subjects for cataract or any other operation. This condition is not unlike that of the alcoholic patient who is likely to do badly when disease or surgical operations tax his lowered vitality. He does not respond readily to treatment, or throw off complications which may arise.

It is not my intention to intimate that I believe that a large or even a moderate percentage of our cataract patients are liable to suffer from some form of uveitis as the result of endogenous infections; on the contrary, experience and observation show that the percentage of cases is not large *from all causes*, and that by proper eliminative treatment, it can be kept very small. It is to the treatment of this small percentage that I desire more particularly to call attention.

Experience has shown that early, prompt and energetic treatment, long-continued, if necessary, will often save useful vision in cases in which, otherwise, it would probably be lost.[5] There is no room here for therapeutic nihilism. We must have the faith of our fathers in the virtue of drugs, and administer them heroically, if necessary, to get results.

In an eye, opened for the first time between the second and fourth days, the lids should be free from redness and swelling, the section should be *firmly closed*; if not healed, there should not be prolapse, incarceration or entanglement of iris, the conjunctival redness and discharge should be slight, the aqueous should not be muddy, the tracery and pattern of the iris should be clear and distinct and the pupillary area unobstructed. Barring later accidents or complications, such an eye will heal kindly with a minimum of reaction.

If, on the contrary, the eye should show any of the following conditions: photophobia, chemosis, excessive redness and discharge, a cloudy cornea, cortical débris, muddy aqueous and discoloration of the iris, with, it may be, a gaping wound or vitreous presenting and iris prolapse and vision equal to hand movements, we know that things are not going well with that eye. In such conditions, we may not be able to recognize any cause for or limitations of these complications, we may not even know whether the infection has come from germs introduced into the eye, *exogenous infection* or whether the condition is an *endogenous inflammation* which by exclusion we can believe is caused by faulty metabolism and auto-intoxication, but the indication to open the flood-gates of the system, the bowels, the kidneys and the skin and eliminate all the poison possible is imperative.

I have had comparatively little experience in irrigating the anterior chamber for removing *cortical débris* after the regular operation: but I know it is not a safe procedure in the intracapsular delivery. I believe, however, that when such soft lens matter is left, the section should be opened and the débris delivered by scoop and pressure, together with *as much capsule* as possible. I believe that it is safer to do this even several days after the operation rather than hope for good results by treating the iritis, keratitis and other complications which are likely to follow.

For many years I have used atropin, 4 per cent. solution, after operation, and scopolamin, 1 per cent. solution, if complications arise, or if the former does not break up synechiæ and dilate the pupil, cocain and epinephrin,[6] which seem to be valuable additions to most mydriatic solutions, may be added. In iritis and cyclitis, mydriatics also do good by putting the ciliary muscle at rest. Leeching around the eye or blood-letting from the arm as advised by Fox,[7] may be of use in cases of primary or secondary glaucoma; when miotics do not relieve the tension of the eye-ball, and the blood-pressure continues high, a chamber, sufficient to get a knife through, may be secured, and an iridectomy performed without danger of wounding the lens. In this connection consult Fisher.[8]

In my experience, *cases of delayed healing of the* section are often associated with high blood-pressure and high intra-ocular tension. Healing can often be stimulated by local applications of medicines to the lips of the section and the administration of drugs to reduce high blood-pressure and high intra-ocular tension; the most important are purgatives. Sodium nitrate, nitroglycerin, potassium iodid, eserin or pilocarpin are indicated, and deep injections behind the eye of cyanid of mercury, salt solution and pilocarpin sweats or Turkish baths, hexamethylenamin (urotropin[9]), potassium iodid, colchicum, sodium salicylate, the latter in immense doses, 1 grain for each pound of body weight in twenty-four hours (Gifford).

Hot applications, leeches, atropin, scopolamin, eserin or dionin subconjunctivally, according to the state of the tension and other conditions of the eye-ball, are of great value. The value of mercurial saturation of the patient by the mouth subconjunctivally, hypodermically, intravenously, or by inunction is as well established as any empirical fact we have in medicine, and is the chief reliance of our English confrères in deep-seated intra-ocular inflammations.

The use of hexamethylenamin as a preventive of infection while the section remains open, or even after it has closed, has not yet been sufficiently studied. Its utility in these eye conditions is deduced from its known antiseptic action through the urinary tract, and it is also known to be eliminated through the aqueous humor, and is thus thought to prevent or modify a beginning inflammation of the uvea.

I have used it in one hundred cases, and although I have had only one purulent infection, I have not been able to reach any definite conclusion regarding its efficacy. Its irritating action on the bladder is an objection to its use, and I have not therefore been able to give the large doses, from 30 to 60 grains, recommended by some writers,[10] who insist that these massive doses are essential to success, but have been content with doses of from 7 to 10 grains three times a day.

We are in possession of many empirically known facts which must serve as a working basis in the treatment of the postoperative complications whether they result from faulty metabolism and auto-intoxication or not, which must guide us until we have a scientific method of treatment. Postoperative delirium is believed by some to be a result of auto-intoxication. This statement I would not question. I think, however, that loss of orientation is more often caused by defective cerebral circulation, due to sclerotic arteries and the use of the occlusive bandage and want of care in using atropin, than to other causes. The relief which usually follows removal of the bandage and care in the use of the mydriatics is evidence of the correctness of this view.

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[5] Symposium on Uveitis, The Journal A. M. A., Sept. 20, 1902, p. 676, and Oct. 4, 1902, p. 820.

[6] For use of this term see The Journal A. M. A., March 25, 1911, p. 910.

[7] Fox, L. W.: Personal communication.

[8] Fisher: Edema, p. 129 et seq.

[9] Gradle, H. S.: Ophth. Rec., xx, 110.

[10] Dinkelspiel: Jour. Ophth. and Oto-Laryngol., November, 1910.

It may be a question whether the part of the paper which relates to the evil effects of auto-poisoning as it concerns the operated eye, will be regarded as of much importance in itself because of our limited knowledge of the subject. But I am convinced that any one who is sufficiently interested will find that the subject is a broad one with enough known truth pervading it to suggest that further study and research will be rewarded by a broadening and accuracy of our knowledge of the harmful effects of self-poisoning, and the means of preventing this condition, which will reward the investigator and benefit mankind.

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ABSTRACT OF DISCUSSION

Dr. D. W. Greene, Dayton, Ohio: In addition to what has already been stated in the paper, I wish to emphasize the importance of medical treatment whenever it seems indicated either before or after operations, and to state my confidence in the efficacy of two remedies, which if used in a definite way and in proper doses, will greatly improve, if not cure, a higher percentage of uveal exudations, with or without plus tension, than any plan of treatment with which I am familiar. In the limited state of our knowledge concerning these drugs, one should not feel justified in depending on their use alone, but should still use in conjunction with them the old stand-by treatment, elimination, large doses of sodium salicylate, mercurial saturation. The remedies referred to are dionin in 5 per cent. to 10 per cent. solution, subconjunctivally, and citrate of soda in 5.5 per cent. solution used in the same way, whenever plus tension becomes an element in the case. This latter drug will reduce the tension of an enucleated animal eye which has laid in a weak solution of hydrochloric acid until it becomes very hard. T = plus 3 or 4, to the normal or even subnormal tension in a short time. This is the statement made by Fischer in his book entitled "Edema." Any one can satisfy himself of the truthfulness of this statement who will put it to a test. The only question is whether the living human eye can be influenced in the same manner and to the same degree that is observed with such regularity in the eyes of dead animals. My experience with this use of 5.5 per cent. of citrate of soda in glaucoma is limited to one case of the chronic simple form in which the tension was reduced in each eye from about plus 2 to normal. There was no restoration of vision that had been lost but the improved appearance of the eye was quite noticeable in clearing of the cornea and better definition of the tracery and pattern of the iris. This drug is only on trial, but if Fischer's theory that glaucoma is only a local edema should be accepted as the true explanation of its occurrence, his plan of treatment promises great possibilities.

Since the paper was written, it has been my lot to see two postoperative complications such as I have attempted to describe in the paper. One was evidently precipitated by excessive use of the eyes in reading three weeks after a Smith operation; the other followed an iridotomy made with a Ziegler knife, which proved not to be sharp. In each case vision fell to recognition of hand movement at one foot.

Under the general plan of treatment outlined in the paper vision improved in each case to 20/15 within thirty days. When several drugs are used for the same purpose it is not always possible to assign to each its proper curative influence, but the influence of deep subconjunctival injections 15 minims over the internal rectus and the same amount over the external rectus of a 10 per cent. solution of dionin in quickly improving the eye conditions was so manifest that it has seemed reasonable to me to attribute the successful outcome of these cases in a large measure to the use of dionin injected as just described.

Dr. William F. Mittendorf, New York: I hardly think that any experiments with the enucleated eye by putting it into acid and afterward into a solution of soda would have any effect on the eye to harden it. Acids will harden the sclerotic coats of the eye, but will not change the intraocular tension. Now, if you put it into a solution of soda, which counteracts the acid, you would naturally get a soften effect. But as to the lens in the living eye, that is differ The hardening is caused by the intra-ocular tension, an do not see how acid and soda hardening of the enucleated can be of much importance in this respect.

Dr. F. T. Rogers, Providence: My experience with di has been that there is frequently an unpleasant reaction. seems to me if 30 minims of dionin are injected subconju tivally the reaction must have been unpleasant. Is not the case?

Dr. G. C. Savage, Nashville: I wonder if Dr. Greene's pa does not contain an error, the use of a 4 per cent. solu of atropin. If he had seen people get as crazy as I h seen them on a much weaker solution, and had sat up night with them and held them in bed, I do not think would use it in that strength. Two drops of a 1 per c solution has made several of my patients entirely crazy f considerable length of time. It may be a tendency in our of the country; I do not know. I endorse the use of di when the eye is inflamed after cataract. I have never g it subconjunctivally. I would not hesitate to give it, stati or no statistics. I do not believe that the reaction m other than good to the inside structures of the eye. W ever there is a suspicion of infection of the corneal inci I do not believe we have anything better to help to des that infection at once than a fairly strong solution of a acid. Use 1 drop of acetic acid No. 8 in 5 drops of wa apply a weak solution of cocain and in two minutes ta pledget of cotton on a toothpick and dip it in the solution carry it along the incision. Acetic acid is undoubtedly ge cidal. In its after-effects it is soothing, and it is promoti epithelial growth.

Dr. H. W. Woodruff, Joliet, Ill.: I have had some ex ience in the use of citrate of soda in increased tension, inasmuch as this subject has not been investigated excep a few, this may be of some use to you. I have used 5 cent. citrate of soda injections in a case of rise in ten following iridocyclitis with very happy results. The ten was lowered in five minutes and did not become elev again for two days. At the end of that time the ten began to rise again and a second injection was made with same results, and the tension remained down from that t on. That is the only case in which I have used the drug have felt that it could not be of any service in the chr forms of glaucoma, except perhaps temporarily, but in th acute cases I think it is exceedingly valuable. I would to say something also about the treatment of the infect which we sometimes have following cataract extraction, that is regarding the use of injections of cyanid of mercu which, by the way, sometimes also increases the tension. Savage has spoken of the treatment of the wound by ace acid, which is, of course, proper. One objection I have alwa had to the after-treatment as advocated by Dr. Greene in t Smith operation is not examining the eye for several da I always want to look at my extractions at least the d afterward, because I am absolutely certain that I have sav eyes which would certainly have been lost if I had delay the examination of the eye. Very often cases of infectio do not manifest any pain; the patient does not complain, bu you take off the bandage and the cornea has sloughed. I wi relate one case to illustrate it. I performed a cataract operation on a patient who had a dacryocystitis. I had though perhaps I had eliminated the infection. I had not removed th sac, but there appeared to be no sign of pus and no organism in the conjunctival sac. Of course, I did not feel at all satisfied about it. The next morning when I removed the bandag there was a hypopyon, a cloudy pupillar area; in fact, there was no question that there was an infected eye. I immediately made an injection of mercuric cyanid solution in the strength of 1 to 1,000, injecting 8 minims with 4 minims of a 4 per cent. solution of cocain. I examined the eye again in the afternoon, perhaps about four or six hours later, and there was no increase in the hypopyon and apparently some clearing of the anterior chamber. I made a second injection of the same strength and the next morning there was no pus in the anterior chamber; the media were clear. No further injections were necessary and the patient made a recovery with an average degree of vision. I have had a number of cases of which this one is a fair sample. Very often it has not been possible for me to see the eye so soon as a day after operation, and I have always felt that almost every case of simple infection if seen within twenty-four hours and this injection made, could be saved.

Dr. F. P. Calhoun, Atlanta, Ga.: The case I wish to report is apropos of the medicinal treatment before cataract operation. It was a case of cataract in which there was hookworm disease, one of four reported at the recent meeting of the Georgia State Medical Society. This case was in every way typical of this disease. The patient was anemic, with bloated face and dropsical extremities, offensive breath and a history of ground-itch several years before. The hemoglobin was 20 per cent. The boy was 20 years old, but in intellect was a mere child. He had been blind about a year. The eyes showed typical soft cataract. Three discissions with one week intervals were made with no ripening at all of the lens. The patient had hyperemia of the conjunctivæ. At that time it was decided to give the patient the usual treatment for hookworm, namely, restricted diet, then calomel, salts and thymol. A collection of the stools was made after this treatment and there were 850 parasites found. Under Blaud's pills and a nutritious diet the patient rapidly improved in his general condition and two weeks after this treatment there commenced to be a marked reaction in the lens and great injection of the conjunctivæ. The ultimate results were most satisfactory. The point I wished to make was the mistake in not giving this treatment before the discissions were made. I believe the reaction would have been more marked.

Dr. A. E. Bulson, Jr., Ft. Wayne, Ind.: What are Dr. Greene's reasons for using dionin subconjunctivally? I have used it in that manner and have never seen any advantages over its application to the conjunctival sac. The effect seems to be the same, while subconjunctivally it is painful.

Dr. D. W. Greene, Dayton, Ohio: In answer to Dr. Bulson I use dionin subconjunctivally because it is much more effective. I never give these injections without previous injection of weak cocain or eucain. Usually there is little pain. I deal largely with old soldiers and they stand pain well. In private practice I have had a good deal of complaint. One patient complained a great deal of everything done for her, so there was difficulty in estimating how much pain she had. I had a man at the Soldiers' Home to whom we gave no anesthetic whatever and he did not complain. Another man complained bitterly who did not have the anesthetic beforehand. Dr. Rogers asked concerning excessive reaction. That is what does the good. One does not get the reaction from applications outside; the same with the citrate of soda. One can drop it into the sac and let it remain fifteen minutes, but one gets no effect. One must get it deep in behind the eye or along the course of the muscle. Of course, one does not want to get the dionin into the capsule of Tenon; one wants to get it in the course of the muscles without going into the capsule. If one puts it there a very severe reaction and much more pain will be the result. That I have tried to avoid.

In reply to Dr. Savage's question in regard to 4 per cent. solution of atropin I do not know why I have used it except that I have not been able to get the reaction I wanted from 1 per cent. solution. I have never seen untoward results from this. I do not think Dr. Savage will if he will use it right. In the paper I stated that the patient's head must be turned to one side and the atropin milked out carefully and washed out so that it will not get into the punctum. I have never seen a case of poisoning from this solution and it has seemed to be a much more effective strength than the 1 per cent.

In regard to acetic acid, I had a case of delayed healing in a private case in which I attempted to use nitrate of silver in an open wound. I did not wipe my applicator and that nitrate of silver in 10 per cent. solution left a white line on Descemet's membrane, and that has made me fearful of applications of any strength. Dr. Woodruff's experience with the citrate of soda has been like mine.

In regard to examination the second day, certainly no other wounds are opened and meddled with and handled the second day; they are given time to heal. Injections of mercuric cyanid I have used in only a few cases. They are painful and I have avoided them. I once saw Major Smith flush the conjunctival sac to remove blood and he, as you know, uses a great deal of force; the reservoir is up 5 feet. He not only washed out the blood-clot, but a 1 to 2 per cent. bichlorid solution went into the anterior chamber, and Descemet's membrane became white and remained so for four weeks, while the patient was in the hospital, and I suppose it is white yet.

THE CHOICE OF THE ANESTHETIC

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Nitrous oxid was introduced as an anesthetic by Wells in 1844, ether by Morton in 1846 and chloroform by Simpson in 1847. Although a large number of other agents have been tried since, these three introduced within the short period from 1844 to 1847 still remain the most valuable means of producing general anesthesia.

In 1868, Edmund Andrews of Chicago demonstrated the value of the mixture of nitrous oxid and oxygen as an agent for continued anesthesia. In 1884, Kohler discovered the value of cocain as a local anesthetic. In 1899, Bier produced, by the injection of cocain into the subarachnoid space of the spinal cord, anesthesia of the lower extremities and the lower part of the trunk. In 1869, Claude Bernard observed in experiments on dogs that morphin, given before the administration of chloroform, facilitated its action and reduced the amount required. This suggestion was soon put into practical use and morphin, morphin and atropin, and morphin and scopolamin or hyoscin have since been more or less widely employed before the administration of a general anesthetic.

To-day the surgeon has at his disposal the following methods of producing anesthesia:

1. General anesthesia.
    a. Chloroform.
    b. Ether.
    c. Nitrous oxid (alone, with air, with oxygen).
2. Spinal cord anesthesia.
    Cocain and similar agents.
3. Local anesthesia.
    Cocain and similar agents.
4. Morphin and scopolamin (hyoscin), either alone or as part of a sequence.

These four methods have been combined in all possible ways as mixtures and sequences, as the A.C.E. mixture, as the nitrous oxid and ether sequence or mixture, and as the morphin-scopolamin-ether sequence, etc.

During the last eight years, in our surgical service at the Presbyterian Hospital and Rush College, we have attempted to make a study of the subject of anesthesia and this paper is in the nature of a report of the conclusions arrived at from our own work and from a study of the literature undertaken with the purpose of aiding us in the selection of the anesthetic. The work which has been done on our service is represented by five reports[1] which, briefly summarized, gave us the following facts:

The study of Favill and myself showed clearly the late poisonous and fatal effects of chloroform, associated with acute fatty degeneration of the liver. This has been confirmed by a study of the previous literature and by the great accumulation of clinical evidence and laboratory experimentation since that time; the paper on nitrous oxid was simply intended to show its wide possibilities in major operations. The work of Hamburger and Ewing was both a clinical and experimental research, and I regard their work of special value. Their conclusions are as follows:

In analysis of blood-changes incident to nitrous oxid anesthesia we find:

A. The hemoglobin is not permanently reduced nor is anemia produced.

B. Hemolysis is not increased.

C. The changes in the readings of the hemoglobin (there is an apparent increase in hemoglobin after nitrous oxid anesthesia) and of the red cells are transient and of no surgical significance, and are explained on the basis of capillary stasis. The production of reduced hemoglobin is not a result of the anesthetic itself, but is due to the accompanying asphyxia.

D. The changes in coagulation time are not constant, but in general there is an increase in the time required for clotting, most marked about the third day.

In an analysis of blood-changes incident to ether anesthesia we find:

A. The hemoglobin is slightly reduced; therefore a light anemia is produced.

B. Hemolysis is not materially increased.

C. The changes in hemoglobin and red cells are not to be explained on the basis of blood inspissation.

D. Ether causes a marked decrease in the coagulation time most marked from the seventh to the tenth day. The average fell from seven minutes before anesthesia four minutes on the seventh day. This may have an mportant relationship to the clinical occurrence of infarcts and thrombus a week or ten days after anesthesia. This action of ether might be beneficial in certain hemorrhagic conditions such as hemophilia and jaundice.

In chloroform anesthesia we find:

A. The hemoglobin is reduced and an anemia is produced.

B. Hemolysis is increased.

C. It causes a slight decrease in the coagulation time, most marked from seven to ten days.

In a comparison of the three anesthetics from the standpoint of blood-changes we conclude that nitrous oxid causes no permanent effects of any significance: that ether causes more harmful effects (slight anemia and marked decrease in coagulation time); that chloroform causes the most harmful results (hemolysis and production of a distinct anemia).

The work of Evarts Graham was undertaken as a part of a general problem on the occurrence of various postoperative lung complications, in which we have been specially interested, and was directed to the study of the influence of ether on certain processes of immunity. His conclusions contained in his complete paper[2] are in part as follows:

1. In his experiments the phenomena of bacteriolysis and agglutination were unaffected by ether.

2. Ether, as given for anesthetic purposes, reduces the property in human and rabbit blood of promoting phagocytosis of streptococcus, pneumococcus, staphylococcus, colon and typhoid bacilli. This effect is easily studied *in vitro*.

3. The period of depression of phagocytosis after ether anesthesia is variable depending on many factors.

4. This reduction is apparently due to a direct action of the ether on the serum and leukocytes.

5. The explanation of this action of ether is not clear, but the experiments suggest the possibility of its being due to the fat solvent power of ether.

6. Lecithin in small amounts *in vitro* and also when giv subcutaneously counteracts the inhibitory effects of ether.

7. Olive oil *in vitro* and *in vivo* when given per rectum seer to exert the same effect as lecithin in counteracting the inhil tion of phagocytosis produced by ether, but to a less degree.

The recent paper of Dr. Isabella Herb[1] is a practic one on the administration of general anesthetics a is on the whole a plea for simple uncomplicated metho of anesthesia, and for placing this important part surgical work in specially trained hands, a position which I am thoroughly converted.

From these special studies and from a review of t literature, we shall attempt to draw conclusions whi will assist in the selection of anesthetics.

In regard to the immediate safety and deaths on t table, we find in Hewitt's work on anesthetics, in ov one million anesthesias, the following:

	Cases	Deaths	Death-rate
Chloroform	676,767	214	1 to 3,162
Ether	407,553	25	1 to 16,302

In 80,255 anesthesias at St. Bartholomews in Lc don, from 1875 to 1890, there were:

	Cases	Deaths	Death-rate
Chloroform	42,978	33	1 to 1,300
Ether	37,277	4	1 to 9,319

Hewitt believes from his studies that ether is abc six times as safe as chloroform. From the standpoi of immediate danger, therefore, the evidence is cc clusive that no surgeon or anesthetist has the moral rig to use chloroform in preference to ether unless in t special case there are special and peculiar conditio which make the use of chloroform in that particul case safer for the patient. The greater immedia danger of chloroform has been for a long time reco nized and admitted even by its advocates. Until cor paratively recently, especially within the last five or s years, the champions of chloroform asserted that th greater immediate danger of chloroform was more tha offset by the fact that chloroform produced no bad afte effects and that, whereas chloroform killed some on th table, ether killed more in the week or ten days follow ing anesthesia from ether nephritis and ether pneu monia. Let us analyze this claim.

The facts in the present state of our knowledge seen to be that both chloroform and ether can produc injurious effects on the kidneys, and the evidence seem to show that chloroform is just about as injurious tc kidney tissue as is ether.

A more careful study of the so-called anesthetic pneumonias, which we have made on our service, has led to the conclusion that many of them are independent of the general anesthetic employed and should be called not anesthetic pneumonia, but postoperative pneumonias. For instance, Mikulicz found that in one hundred operations on the stomach done under local anesthesia, with cocain, there were as many or more resulting pneumonias than occurred in another series of one hundred done under a general anesthetic. I think one can now say that for the most part postoperative lung complications are autogenous infections; that, as Dürk has shown, the patient carried the specific germ cause about with him before and at the time of operation, and that traumatism or chilling and lowering of the vitality and the resistance, as Graham has shown in the fall of the opsonic index, is the factor responsible for the development of the pneumonia. In the hands of an expert anesthetist and with proper precautions against chilling, etc., there is, in my opinion, little if any more risk of pneumonia after a properly conducted ether anesthesia than after a chloroform anesthesia. On the other hand, it has now been shown that the late serious poisonous effects of chloroform on the liver are common, at least by no means rare, and that they are often fatal.

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[1] Favill and Bevan: Acid Intoxication and Late Poisonous Effects of Anesthetics, The Journal A. M. A., Sept. 2, 1905, p. 691.

Bevan: Nitrous Oxid as an Anesthetic in Major Surgery, The Journal A. M. A., July 20, 1907, p. 197.

Hamburger, Walter, and Ewing, Fred: Blood-Changes Incident to Surgical Anesthesia, The Journal A. M. A., Nov. 7, 1908, p. 1586.

Graham, Evarts: The Effect of Ether on Certain Processes of Immunity, The Journal A. M. A., March 26, 1910, p. 1043.

Herb, Isabella C.: The Administration of General Anesthetics with Special Reference to Ether and Chloroform, The Journal A. M. A., May 6, 1911, p. 1312.

[2] Graham, Evarts: Jour. Infect. Dis., March, 1911.

Our studies of such postoperative complications as femoral thrombosis, lung infarcts and pulmonary embolism seem to show that these complications are the result of trauma and low-grade infections, and independent of the anesthetic employed. Rosenow, on Dr. Billings' service, found in three cases of postoperative thrombus and embolism a pneumococcus of low virulence, with which he succeeded in producing similar thrombi in animals. In this connection the very interesting fact demonstrated by Hamburger and Ewing must be further investigated, i. e., that ether produces a more rapid coagulation of the blood, from seven to four minutes, most marked from the seventh to the tenth day.

Looking at this subject of the late injurious effects of general anesthetics as a whole, including postoperative lung and kidney complications, and fatty degeneration of the liver from chloroform, I think we must conclude that the secondary late bad effects are quite as numerous and more serious after chloroform than after ether. If these facts are true, chloroform has no longer any claim to recognition except in special cases.

Nitrous oxid, until comparatively recently, has been in the hands of the dentists for short anesthesia, although, as already referred to, Edmund Andrews showed as early as 1868 that it could, in a mixture with oxygen, be used for long anesthesia. In the last five years, nitrous oxid has been used more and more in this country. It has had great vogue and has become a fad in the hands of some men who have advocated it as the routine anesthetic in surgical work. Let us attempt to weigh the evidence and assign to nitrous oxid its proper place.

Nitrous oxid for short anesthesia is the safest anesthetic agent known. It has a very considerable field of usefulness and I think that it can very properly be said that a surgical clinic which does not find frequent use for nitrous oxid is, from the standpoint of anesthesia, a badly conducted surgical clinic. In the setting of fractures, in reducing dislocations, in opening abscesses, in breaking up adhesions, in many minor operations of short duration, it is clearly the anesthetic of choice. In longer operations which must be done on patients with impaired kidneys, in whom the possible irritation of the kidneys by chloroform or ether must be avoided, nitrous oxid with air or oxygen offers us the safest anesthetic. In patients who are extremely bad surgical risks as in typhoid perforation, grave general peritonitis, intestinal obstruction, etc., it frequently is the safest anesthetic and is to be selected.

On the other hand, I am of the opinion that patients with bad heart lesions, with broken compensation, are not good subjects of nitrous oxid, as I have heard of a number of deaths in this class of cases and I believe that in such cases ether, if properly given, is preferable.

The effort to make nitrous oxid and oxygen the standard anesthetic in a surgical clinic is, to my mind, ill-advised. Nitrous oxid is far from being an ideal anesthetic. It does not produce in many cases sufficient relaxation, it is uneven in its action, and in some cases the anesthesia is not complete and the surgeon is required to work at a disadvantage. In the ordinary case in which the patient is a good surgical risk, a properly given ether anesthesia is quite as safe for the patient and much more satisfactory for the surgeon than nitrous oxid.

In this connection, I wish to protest against the complicated expensive apparatus for nitrous oxid, oxygen, ether and chloroform sequences and mixtures, which are now being foisted on the market by instrument makers. They are too complicated and cumbersome. It would be necessary only to add to some of these a carbureter and a magneto, and you would have as complicated an apparatus as a 1911 model automobile. The simple cheap stands for gas-tanks and face-mask are much to be preferred.

Local anesthesia has a considerable field of usefulness. In minor operations on the extremities, where the blood-supply can be controlled with a rubber bandage; in circumcision, especially in the adult; in some special operations like ligating arteries in exophthalmic goiter; in tracheotomy, for carcinoma of the larynx and occasionally in hernia operations, especially strangulated hernia with the patient in bad condition, it may become for special reasons the anesthetic of choice. In doing any considerable operation under local anesthesia it is well to give the patient from 1/6 to 1/4 gr. of morphin and 1/150 to 1/100 gr. of scopolamin (hyoscin) a half hour before the operation, and the solution which I have found very safe and satisfactory for the infiltration is 1-1,000 cocain in normal salt with 1 minim of 1-1,000 epinephrin to each 100 minims of the solution. In the majority of these operations less than 100 minims, which represents less than 0.1 grain of cocain, is sufficient, and this amount of cocain is perfectly safe.

Spinal anesthesia, to my mind, has little or no field of usefulness. It is dangerous; it is often incomplete; it often necessitates the use of ether or some other general anesthetic to finish the operation. The after-effects, such as vomiting, headache and the symptoms of the so-called aseptic meningitis, are often severe and distressing. The statistics show that nine deaths occurred in the first 1,000 cases. From what I know of the evidence on spinal anesthesia, and from what I know of the anatomy of the spinal cord, I would under no circumstances, which I can now conceive of, choose spinal anesthesia for my own case if I required a surgical operation. The fiasco of Jonnesco in this country a short time ago was a strong argument against spinal anesthesia. After Jonnesco's spectacular demonstration at the Cook County Hospital in Chicago, some of the attending surgeons tried the method in a few cases. The fifth patient, who had a simple fracture of the patella, died from a moderate dose injected in the mid-lumbar region. It is an interesting physiologic and pharmocologic fact that anesthesia can be produced by spinal injection of cocain, stovain, etc. It is too dangerous and too unsatisfactory a method ever to supplant our present methods of anesthesia. It should be limited to an exceedingly small field. I am quite in accord, too, with Keen's statement:

> The ideal anesthetic will not be one which will abolish pain without abolishing consciousness. To have the patient aware of surgical emergencies which test even a veteran operator's skill and resources to the utmost would frequently invite death by the terror which it might occasion. The ideal anesthetic will abolish pain by the abolishment of consciousness, but without danger to life.

What of scopolamin and morphin? In the early work with this combination several years ago, where complete anesthesia was sought from these agents alone, the mortality was so great that the method was soon abandoned and the method remains now with us simply as the first part of some sequence, such as the morphin-scopolamin-ether, or the morphin-scopolamin-nitrous-oxid-ether sequence.

My anesthetist, Dr. Herb, after an experience in 15,000 cases, protests against the routine giving of drugs before ether or chloroform anesthesia. She says: "In selected cases it may be of value, but the use of morphin with atropin or hyoscin (scopolamin) is absolutely detrimental in many instances." It is a well-known therapeutic fact that one drug may augment the action of another and this is especially so in the morphin-scopolamin-ether or chloroform combination. Consequently, an overdose is more easily administered. In case of any untoward accident there is not only the volatile and quickly removable drug, but also the non-volatile and comparatively permanent one to be eliminated.

Not the least of the objectionable features of drugging before general anesthesia is the masking of the most valuable of all guides in anesthesia, namely, the pupillary reaction. Morphin allays the reflex excitability of the air-passages, retards coughing, favors the retention of aspirated blood or vomitus in the trachea which predisposes to pneumonia. Many people are not able to take morphin without distress and vomiting and in such individuals the disagreeable after-effects of ether would be aggravated.

The giving of the anesthetic in a surgical operation is a very important function and it should be in competent trained hands. A thoroughly qualified professional anesthetist is an indispensable member of a modern surgical team. In this country we have too long left this important function in the hands of the junior intern. The difference between the safety of the patient and the comfort of the operator in a clinic in which the anesthetic is in the hands of a trained professional anesthetist, as compared to a clinic in which the anesthetic is in the hands of a junior intern, whose term of office is but a few months, is so enormous that one who has had the services of a skilled anesthetist would never voluntarily return to the unskilled intern anesthetist.

Every hospital should have trained professional anesthetists. The interns should be instructed by a professional anesthetist and they should give many anesthetics under supervision so that they can learn how it should be given; in a teaching hospital, senior medical students should be given practical instruction in the use of anesthetics, but the trained anesthetist should be present and be responsible for the anesthesia.

Women, I think, make the best anesthetists just as they make the most reliable and conscientious operating-room nurses. In these days of modern surgery, the responsibilities and the functions of the skilled anesthetist and the head surgical nurse are little less important than those of the operator himself.

In answer to the question, how we are to secure the safest and most satisfactory anesthesia, I would from this study submit the following conclusions:

1. The anesthesia must be placed in trained professional hands.

2. The methods of giving the anesthetic and the apparatus employed should be as simple and uncomplicated as possible.

3. The anesthetic mixture and sequences, like the old shot-gun prescriptions of the past, should be avoided, and the patient's life not jeopardized by the administration of two or more powerful poisonous agents at the same time one of which might intensify the action of the other, or mask the ordinary danger signals.

4. For routine work, ether, by the open or drop method, is the safest and most satisfactory anesthetic and in the usual run of cases in a hospital service the anesthetic of choice, in from 75 to 80 per cent. of the cases.

5. Chloroform must be discarded as a routine anesthetic. It produces too many immediate and late deaths to warrant its general employment. It is only in the exceptional case, as possibly in a laryngectomy in which one might feel that the direct introduction of chloroform vapor into the trachea might produce sufficiently less irritation to the tracheal mucosa with less risk of pneumonia than ether, that we would be warranted in employing it.

6. Nitrous oxid is the anesthetic of choice for short operations, manipulations and examination. It is also the anesthetic of choice in operations on patients with seriously impaired kidneys and often in cases in extremely bad condition as typhoid perforations, general peritonitis, etc. It should not be employed in patients with bad hearts. It is not so satisfactory an anesthetic as ether and it should not be employed in preference to ether in patients who are good surgical risks.

7. Local anesthesia with cocain and similar agents has a limited field of usefulness. The amount of cocain employed by infiltration should always be short of a toxic dose, from 1/10 to 1/4 of a grain. It should be employed in normal salt solution with small amounts of epinephrin. Where the amount does not exceed 1/10 of a grain it may safely be preceded by a small dose of morphin and scopolamin.

8. Spinal cord anesthesia has to-day no place in surgery.

9. The use of morphin and scopolamin (hyoscin) before a general anesthetic brings with it dangers which are not compensated for by any advantages, and the method should be abandoned or limited to specially selected cases.

10. Finally, I believe that the time has come when we must here in America make a place for the trained professional anesthetist on our surgical team.

122 South Michigan Boulevard.

Non-Secrecy of Medical Methods.—At a day when it was usual to keep as a secret any medical or surgical discovery, Paré thus affirms: "For my part, I have shared freely with all persons the gifts which God has conferred on me. And for that I have not the less; just as the luminosity of the candle is no whit diminished, although many come to light their torches."

THE CARE OF PATIENTS WITH ADVANCED TUBERCULOSIS

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There are certain peculiar features about advanced cases of tuberculosis which are often lost sight of in our discussions of their care from a theoretical standpoint. These features are, it seems to me, essential to consider before practical application of our present schemes can be adopted.

These features may be tabulated as follows:

1. Advanced consumptives are sick and provision for their care must include an equipment for their continuous stay in bed and adequate nursing under such conditions.

2. They are wanted nowhere: Our ordinary institutions for the care of the sick refuse them; sanatoriums for the tuberculous refuse them; private practitioners want to get rid of them; boarding-houses and homes discharge them without compunction.

3. Few of these patients can ever be so built up that they can return to their former occupation, for while many recover sufficiently to do light tasks and live an average lifetime, their working hours are much reduced and their ability to do heavy work or sell eight or nine hours of their time to an employer, day in and day out, is gone forever.

4. Many of them, under the supervision of strict medical care, and especially of sanatorium regime, live for many years quite unable to work. These patients do not remain long in sanatoriums after recovery has progressed this far.

5. These advanced subjects are sources of infection if they are the least bit careless, and, submitted to the scrutiny and remarks of acquaintances, they are very apt to become careless.

6. Subjects of advanced tuberculosis in this country, and in most other countries, have the rights of citizenship, and can and do refuse daily to accept the opportunity open to them of institutional care even for a few weeks or months. This fact makes the provision of large institutions far from centers of population much less valuable than it might otherwise be.

7. Those patients who are so far recovered as to be capable of varying amounts of daily work of a certain character owe this work to the community for their care. All work done in excess of the amount necessary for their care should be paid for. I cannot but feel that provision for such work should be made for the good both of the patient and of the community. The difficulty, of course, arises mainly in determining the character of the work to be offered to such patients. As Lyman has pointed out, it is difficult to get returns by transplanting men who have been trained to one class of work to labor of another kind. Still, I think this problem can be worked out so as to bring results. I am sure of one thing, however: that in the majority of instances the returns will never come out of gardening or farming.

With regard to the necessity for the care of patients with advanced tuberculosis, much can be adduced to show that a marked reduction in mortality from tuberculosis can be attained without such provision, or at least where no such provision has existed. On the other hand, the burden of proof is to indicate that the efficient and practical care of advanced cases is one of the important elements, if not the most important element, in our endeavor to control this disease. I think so from the fact that we preach it; that we adduce statistics to prove it; that we quote the opinions of men of authority to urge it and that we are practically all agreed on its necessity.

If this be not so from the standpoint of control, I would ask no greater argument for the efficient provision for the care of such cases than the dire necessity which is evidenced by the pitiable condition under which this excommunicated portion of our populace exists. They are shunned by every port of human habitation. They have no place to lay their heads. Even those places built for the care of the sick, which should most welcome them, refuse them admittance. Take, for example, the modern sanatorium; every one of these refuses yearly more cases than it accepts because these cases are too far advanced for admission, and if, by chance, they admit such a patient who is careless, he is summarily discharged to spread the infection broadcast. Such arguments have forced me to conclude, without any other argument, that the care of patients with advanced tuberculosis is the most essential demand of modern tuberculosis work.

Before entering on what I would consider a model armament for the care of advanced cases, I think it would be wise to attempt some classification of the cases as they exist from the standpoint of taking practical care of them. In the majority of minds the thought of segregation and institutional care is the sole remedy, and yet this is as impossible as it is unpractical. It is made unpractical by the varied nature of the cases to be dealt with. One advanced case, in the ordinary acceptance of the term and under like conditions, is as infectious as another. No one would claim, however, that an advanced consumptive in arrested and fibroid state, with an earning power equal to much more than the demands of himself and his family—an earning power based on brain power which can be exercised without endangering or shortening his life—should be segregated in an institution; yet I know such patients who daily, in office, home and club, spread infection by expectoration in the most dangerous way. Such patients have been told a hundred times of the danger they spread, but with a carelessness and a maliciousness born of power they scatter their germs in the nostrils of a helpless public. Such persons are just as dangerous as the poor foreigner whom the law in some states can claim and incarcerate for a similar offence.

Without further example or detail the cases submitted for care are as follows:

1. The dying patients whose early doom is written on their hectic, hollow cheeks.

2. The patients whose span of life is yet six months to three years of bedridden invalidism.

3. The patients who still have five to fifteen years of intermittent, much-reduced earning power.

4. The patients with fibroid tuberculosis, whose lives will in no wise be shortened by their tuberculosis and whose earning power is but little reduced.

5. The patients with advanced disease, whose wealth admits of their being under private care where they wish, in home, hotel or sanatorium. Such patients may be dying, chronic or intermittent in type.

6. The malicious patients, wealthy or poor, with advanced tuberculosis.

On this classification it may be remarked:

A. All subjects carry danger with them to be spread when their habits are careless, and no provision can be perfect which neglects any single class.

B. No single type of institution will handle all cases.

C. No voluntary power can handle more than a small percentage of any class. The law must eventually be the means by which this infection is controlled.

Adopting this classification I cannot but feel that the first move to secure desired results in this work must be the return of the care of these, under proper provision, to the general hospital. The reasons which make this provision necessary and of the first importance in securing efficiency are:

1. Only in this way is it possible to educate the members of our profession, our medical students and our nurses from whom tuberculosis work has been so much dissociated during the past ten years; and, after all, it is only through these groups that we can attain proper care and supervision. As the matter stands to-day, in the vast majority of instances the patients who come to the dispensaries and hospitals come voluntarily because they themselves, or their friends, have suspected their malady when it has reached an advanced stage. This is essentially wrong, as is, in fact, the whole attitude of our profession toward this disease. The constant advice from doctors to nurses and others who are called on to work in this field is one of the main deterrents to efficient work. By no group of men is this disease and the institutions dealing with it viewed with such prejudice as by the medical profession, and it is impossible to obtain results until this is eradicated. For this reason, if for no other, I consider it essential for the general hospital to establish wards or pavilions for the proper care of these patients and for the instruction of those who have primarily and persistently to deal with the tuberculous sick.

2. These institutions regularly admit tuberculous patients who are suffering from other intercurrent maladies to their wards for operations, for confinement, etc., and make no provision for their supervision and the prevention of infection. I have repeatedly seen within the year, in the service of our best surgeons, subjects of advanced tuberculosis, undiagnosed, in beds in hot, dry wards, who expectorated in handkerchiefs, stuffed these handkerchiefs under their pillows where the sputum readily dried, and I have seen these pillows turned and smoothed by nurses without the least fear or care. Could anything easily be worse in an institution for the care of the public's health? Worse than this, most of the general hospitals will admit patients with consumption to private wards provided these patients are wealthy enough to pay for private rooms and nurses, and I seldom see adequate provision for proper care and prevention of infection. Under these conditions I feel, therefore, that general hospitals should make proper provision for such cases and give careful printed instruction and adequate education for the care of the tuberculous to all whom they seek to educate. Many patients would willingly go to such institutions without the fear which our crusade has engendered in the minds of profession and laity alike, and could be educated and instructed here as well as elsewhere.

There need be no fear of infection spreading from these cases when properly cared for. Less danger by far could come from these patients under proper instruction than under conditions as they exist to-day, or from many of the cases now cared for in medical wards.

3. In such institutions there is already the nursing force, the medical care, the administrative equipment and the situation in the centers of population which are so necessary for the care of advanced cases of tuberculosis and which are so great a part of the expense of such care.

Let me here interpose again the feature of training our doctors and nurses. On the fingers of one hand can be counted to-day those schools in which adequate education is given to medical students. The Universities of Pittsburgh, Pennsylvania and Johns Hopkins are among the most efficient of these schools, and, so far as I know, the Tuberculosis League of Pittsburgh is the only organization giving a broad education to nurses in all departments of municipal tuberculosis work. How can such a problem be handled when we so shamefully neglect the very people who are to handle it?

Next to this provision for a certain number of advanced cases in general hospitals and the great value accruing from it, I would urge proper provision in all county, state, municipal and charitable institutions such as asylums, jails, poorhouses, prisons, orphanages, homes, etc. Such provision would take proper care of another large number of advanced consumptives who are still in large part neglected and, as I know from personal experience, do much to spread infection under existing conditions. I am aware that something has been done in this regard; but the completion of the work I would consider one of the first duties of the state and municipal departments of health. Such provision for a second large group of cases is enhanced by an equipment of nurses, doctors, administration and location which need not be duplicated.

The third necessity—and I consider this easily third in importance—is the provision of separate institutions for the care of patients with advanced cases. These, to be successful, must have certain requisites:

1. They must be near the centers of population, easily reached by patients and patients' friends.
2. They must be provided with an adequate nursing staff.
3. They must be prepared to keep these patients indefinitely. Short stays are, I consider, of small value and patients should be allowed to stay until death intervenes.
4. They must provide for and demand some sort of work from those who are able to do some work but unable to sell their time as required by regular employers.
5. They must accept pay for care from those who are able to pay for support. This is necessary for the tone of the place as well as for the morals of the patients.
6. These institutions must be of varied sorts, some provided by states and county in conjunction, some by municipalities; some by charitable organizations, some by private corporations. This is necessary because no one institution can care for all social and racial classes, and no provision is adequate that neglects any one class of cases.

The fourth provision for the care of advanced tuberculosis is that necessary for the patients who are to remain in their homes. By far the largest number of patients with advanced tuberculosis will always be cared for in this way and it is here undoubtedly that the greatest good can be done.

To accomplish results in this field we have already the means in our corps of tuberculosis nurses.

The great weakness in this branch of work to-day is the multiplicity of agents at work and the lack of organization among them. In Pennsylvania the most serious difficulty in the way of progress of organization lies in the pettiness and jealousies existing between the local state, municipal and charity organizations, and until such are removed efficiency cannot be attained. There is so much for all to do which no one agency can ever do alone that it is a great pity that this condition exists.

The first necessity, I think, is for division of labor and proper apportionment of territory. This was provided for in Pittsburgh by the formation of a commission on which all factors, state, municipality and charity, were represented and a stocktaking of the city was accomplished; but when the division of work was proposed, both state and municipality withdrew and the accomplishment of this desirable end is still in the future.

To the charities I think it would be wise to delegate small territories which could be worked intensively in such a way that the results would guide future movement and progress by larger agencies.

The state (by virtue of its legal status) must have supervision over the whole field, but should, I think, guide, direct and demand local efficiency and autonomy rather than paternally provide the whole ammunition.

The municipality should carry out its labor in accordance with the state law and under its guidance. All reports of cases and work done by all agencies should be centralized in the state department of health, and from here, based on these figures, should emanate from year to year the plan for the state.

To sum up, then, my views on the care of advanced cases are as follows:

1. Provision must be made for all social and racial classes.
2. Provision must be made in general hospitals for a group of cases, mainly for its educational value on doctors, nurses and the public.
3. Provision must be made for a second large group of cases in state, municipal and charitable institutions.
4. Provision must be made in special institutions provided by state, municipality, charity and private means for a third group.
5. Provision must be made for a final group by instruction and care in the homes by doctors and nurses.
6. Small institutional units are of more value than large institutions.
7. All cases must be registered in the health department of the state. The state must supervise and control the whole movement. It must do this through its local agencies and subdivisions (I mean municipalities and counties) and make certain demands from charities and other similar agencies for uniformity of plan and apportionment of work.

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THE BLOOD-PRESSURE IN PNEUMONIA[*]

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The treatment of pneumonia is still so empiric that any observations which may tend to assist in the treatment of this disease are worth reporting. A few observations on the blood-pressure in some forty-eight cases of pneumonia in adults are, for this reason, offered for consideration. The reports on the blood-pressure in pneumonia vary so greatly that there must have been heretofore great divergence in instruments used or an insufficient number of observations to enable any one to gather together into a connected whole the observations that have been made. Some observers class pneumonia as a disease with normal pressure, others as one of hypertension, and still others as one with abnormally low pressure. Giglioli reports some fifty cases measured with the Riva-Rocci instrument, and states that in favorable cases the changes in pressure were slight. In severe cases the fall at the height of the disease on the fourth or fifth day was down to 80 or 90 mm. of pressure. In fatal cases rapid fall of pressure with dilatation of the heart is recorded. Others have found that a slight hypertension occurred during the first day or so, that in serious cases there was the rapid fall, the practically normal run of pressure in favorable cases, and that in favorable cases the pressure slowly returned to normal in convalescence. A drop down to 90 mm. of mercury has been considered of serious import. Gibson of Edinburgh, in studying the relation of blood-pressure to pulse and respiration, has endeavored to make some rule that would be of assistance in the treatment of pneumonia, or at least could be used as a warning of a beginning lack of equilibrium in the cardiovascular circulation, or even heralding a collapse. He has concluded that as a general rule, the pressure in pneumonia is a little below normal with considerable variations throughout the course of the disease. The sudden fall of blood-pressure at the crisis has not occurred in Gibson's experience; hence, though reported by other observers, it cannot be very common. A pressure that is appreciably below normal is invariably of evil omen, and any considerable fall bodes disaster — and he sums up his experience in the following well-expressed observation:

> When the arterial pressure expressed in millimeters of mercury does not fall below the pulse-rate expressed in beats per minute, the fact may be taken as of excellent augury, while the converse is equally true. That is, when the pulse-rate per minute is higher than the pressure of the millimeters of mercury, the equilibrium of the circulation is seriously disturbed.

C. A. Gordon has confirmed the practical value of Gibson's rule.

The following observations in forty-eight cases of pneumonia have been taken with a Janeway apparatus in Bellevue Hospital, and there has been an endeavor to take a daily measuring of the systolic blood-pressure of each patient. This has not always been possible, but in the cases which are reported a sufficient number of observations have been taken to give a fair judgment of the condition of the pressure in the course of the disease. These cases include both bronchopneumonia and lobar pneumonia, there being eight cases of bronchopneumonia and forty of lobar pneumonia. The ages have ranged from 13 to 78 years. They have been taken as they came to the hospital, of all ages, both sexes, and all conditions of life such as are found in an active general hospital service. They include the mild and moderately severe as well as the fatal cases — those of patients who were total abstainers from the use of alcohol, who used it in moderation, and who used it to excess. Of the eleven fatal cases which occurred, ten were among those who used alcohol, the other patient being a total abstainer. In such a small number of cases as here reported one hesitates to generalize, and one's observations must be recorded as facts and occurrences which may or may not be further corroborated. In the mild cases, in which there did not seem to be much toxemia, the disease did not seem to change the blood-pressure from the average normal in young adults, 120 to 130; it remained normal throughout their attack. In some young adults whose pulse remained below 120 and the blood-pressure remained above 105 during the disease, while there was no change at the crisis in the pressure, it fell below 100 after convalescence had set in, the pressure really being lower in convalescence than during the disease. These patients all recovered. In others the pulse remained below 120 and the blood-pressure below 105, and as soon as the crisis occurred and convalescence set in the pressure quickly and steadily rose to 120 to 130 mm. In no case did we see a sudden fall of pressure at the crisis. In some of the severe cases the blood-pressure has been low, the pulse, temperature and respiration very high, and this ratio has remained persistently throughout the disease. These are the cases in which Gibson's rule is the most noticeable and the patients are very ill and recover or die as the case may be. In those patients who recovered the pulse usually diminished in frequency before the blood-pressure rose. In some few instances the reverse occurred. In other patients neither the temperature nor the pulse ran very high, and the blood-pressure was very low, below 100; still the ratio of Gibson's rule did not point to a bad prognosis, that is, the pulse-rate remained below the millimeter pressure of mercury. These patients recovered and the pressure persisted very low in their slow convalescence. In some patients suffering from chronic nephritis, the blood-pressure remained above 150 mm. but was distinctly lowered by the pneumonia. Some of these patients recovered and some died. In those who recovered the blood-pressure rose after the crisis. In other patients with nephritis, the blood-pressure has remained high (200 to 180) and yet the patients have died. In the cases of elderly patients with arteriosclerosis and in some cases of chronic nephritis, Gibson's rule did not hold good, and yet many of these patients died. The readings of the blood-pressure gave no hint of the cardiac failure. Taking the forty-eight patients, it is interesting to note that twenty of the forty-eight showed Gibson's rule, and of these six die. Of the twenty-eight that did not show Gibson's rule, five died. As expressed in percentages, this shows that of those who showed Gibson's rule, 42.8 per cent. died, but of those who did not show it, 17.8 per cent. died. It is interesting to note among those who showed Gibson's rule that not quite half were alcoholics, and among those who did not show it not quite three-fourths were addicted to alcohol; but then among those who did not show it are included the arteriosclerotics and the nephritics, which further disturbs the ratio of blood-pressure and pulse-rate.

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[*] Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

In summing up the subject Janeway remarks:

> When one pictures the possible causes for variation in lobar pneumonia, the difference in individual reaction to the toxemia and in extent of lung tissue involved, the motor restlessness of some patients, the urgent dyspnea of others, and the great likelihood of an asphyxial rise of pressure where cyanosis is extreme, there is little wonder at these somewhat discordant results.

Looking at the figures alone in print without the patients, the results do seem extremely variable and discordant, but from impressions formed at the bed-side of watching the individual patient, of judging carefully the wisdom of this or that order for medication, and using the knowledge obtained from the blood-pressure as well as from the pulse, temperature, and respiration and general appearance of the patient, the impressions left are not so discordant as the mere grouping of types would seem. In the patients who were non-alcoholic, even among those who had passed the resistant stage of youth, Gibson's rule seems to hold particularly true. With an undisturbed blood-pressure, and with a pulse-rate well below the millimeters of mercury, one may feel easy in mind concerning the outlook, but where the pulse-rate runs higher than the millimeters of mercury of blood-pressure, there is a very distinct warning and danger-sign that cannot be disregarded. After convalescence has set in, the pulse-rate, however low the blood-pressure may be, usually remains well below the millimeters of mercury in number. Patients who have arteriosclerosis, and who have chronic nephritis, are not apt to show Gibson's rule, but the danger of cardiac failure is none the less very great. In the eleven fatal cases here recorded, five showed Gibson's rule and six did not. One cannot, therefore, attribute the break-down of the cardiovascular equilibrium to one cause only, as many are apt to do. We hear much of vasomotor paralysis in pneumonia and infectious disease, and the figures here presented undoubtedly show that it is common enough in pneumonia, but it is not the only cause of fatal termination. The pressure may remain up, and there may be no vasomotor paralysis until a few moments before death, and the cause of death be due to a failure of the intrinsic muscles of the heart. I have often been struck, at the necropsy of patients who had died from what seemed to me a disproportionately small amount of infection in pneumonia, with the frequency in such cases of the brown friable heart muscle which seems to be summed up pathologically as brown atrophy. The great proportion of degenerated heart muscles in alcoholics has as much influence in the increased fatality of pneumonia in these patients as vasomotor paralysis. Of the eleven fatal cases here reported, one-half showed vasomotor paralysis, and half did not. The measurement of blood-pressure, therefore, will decide often the question of whether we should look to the heart or the blood-vessels to reestablish the equilibrium of the circulation. One hears recently a great deal about the use of epinephrin in cardiac failure in pneumonia, but unless one knows whether it is a vasomotor paralysis with a low-tension pulse, or a cardiac failure with a high-tension pulse, one certainly cannot use it intelligently, for while it is wise to give it with a low tension and it undoubtedly has done good in many cases in which this has been the factor against which the epinephrin was working, it is unquestionably poor judgment to use it with a patient whose blood-pressure is already high, and whose heart is struggling without sufficient reserve force against too great a strain. On the other hand, one sees a mixture of strychnin, camphor and alcohol given to raise a falling blood-pressure. One cannot acquiesce in the wisdom of this, for therapeutically it is a neutral mixture. The alcohol will dilate the vessels and reduce the blood-pressure vastly more than the strychnin and camphor can raise it. I have heard it reported that such a mixture had been given all day to raise the blood-pressure, and the situation saved by epinephrin. One always wonders if the epinephrin would have been necessary if the alcohol had been left out. It is also a grave question whether alcohol is advisable in pneumonia until we know whether the blood-pressure is high or low, for if it is lower than normal, we certainly should not desire to further reduce it by such an effective means of lowering the blood-pressure and dilating the vessels as is alcohol. There certainly are patients with whom we are required to use all the means in our power, as camphor, strychnin, digitalis and epinephrin, to prevent a vasomotor collapse, and there are other patients with whom we must equally endeavor with vasomotor dilators to reduce the tension in the pulse to the amount against which an overstrained heart can best work and carry on its share in the equilibrium of the circulation. The blood-pressure instruments to-day are of such convenience that they offer the easy opportunity to ascertain at a visit these facts. A knowledge of the blood-pressure in pneumonia will often be of assistance in judging of prognosis and of treatment. These are the two vital points to the patient.

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ABSTRACT OF DISCUSSION

Dr. Wilder Tileston, New Haven, Conn.: With regard to the blood-pressure in cases of pneumonia, I do not think it has much value in prognosis. At a recent meeting of the American Society for the Advancement of Clinical Investigation Dr. Sailer reported the results of a study of the blood-pressure in pneumonia, and he found that most cases of patients who died did not follow Gibson's rule. I do not think that sufficient data have been accumulated to lay down definite rules regarding the importance of the blood-pressure in determining the prognosis in pneumonia.

THE TREATMENT OF CHRONIC HYPERTENSION *

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It is with the treatment of chronic hypertension as with that of glycosuria or fever, or even pain; it should not, *per se*, be treated away, not artificially kept down, but watched as a valuable sign of most complex disturbances, of which we may or may not alter or eradicate the causes. Verily, to reduce hypertension is not its treatment; to maintain it will often be our task, as in cerebral arteriosclerosis and initial interstitial nephritis, in which increased blood-pressure is indispensable, and in which efforts to reduce tension would only aggravate the condition. In fact, there is in all pathologic hypertension a limit of irreducible tension which is above normal, but below which interference would disturb the cardiovascular equilibrium. To be guided by our *nil nocere* is a matter not only of academic dignity but of the most practical value. Too often are misery and discomfort added to existing derangement and disease, through half knowledge and vain efforts; this is done in direct ratio to the number and potency of our agencies of treatment. Luckily we have not at our command powerful or lasting means or remedies to reduce blood-pressure, the application of which would not bring about such discomfort as to warn the patient that too much of a good thing is received.

"Hypertension" and "hyperpiesis" are new words, but as the conditions thus baptized can be dated back to the time of the Prophets with only slight increase in actual means of treatment, we may go back to the storehouses of time-honored customs and proverbial advices. Next in importance to an equanimity of living, a moderation of working, a cheerful indulgence in minor transgressions (within bounds of righteousness) appears the complex task of regulating diet and breathing; consideration should be given to the toxic aspect of deranged digestion and faulty metabolism, the dynamic side of disturbed intra-abdominal pressure, in relation to diaphragmatic position and excursion and the loosening or tightening of the splanchnic vessels during digestion.

For actual treatment, only people past 40 ask our counsel; to the younger generation it is our duty to spread the warning word. We warn the young men against excessive smoking, chronic overindulgence in meat, the strenuosity of motoring, insufficiency in water-drinking, the revolting habit of food-bolting, the late hours without compensation by sleep, and the irregular periods of physical strain in work or play without constant and gradual training. The young women we warn against late hours, endless social gatherings with coffee and tea, insufficiency in water-drinking, faulty attention to many inner necessities at the expense of outside appearance. The gratitude with which young men and young women, especially young mothers, have accepted and applied good advice in these matters belongs to our most cherished rewards. The young mothers, though often charmingly lacking in good example themselves, make a most commendable effort at teaching wholesome living to their children.

Chronic hypertension is more prevalent among the city population than in the country, and decidedly more among the middle class and the well-to-do; it is especially the result of continuous brain work without let-up or country air, and perhaps overstimulation by coffee, nicotin, alcohol and manifold overindulgences.

Among the toxins which cause hypertension, the purin bodies stand high. They will flood the tissues, whenever proteid metabolism is disturbed, or after direct introduction of food-stuffs, containing abundant nucleins; that is, much meat, kidneys, liver, sweetbreads, brains, caviar, cured meat, sausage, gravies, old cheese, broth, mushrooms, peas, veal, and the like. It is necessary to alter the diet list in this line of restriction; in senile arteriosclerosis, such a radical change in alimentation will soon be followed by weakness without noticeable impression on the pulse. In fact, hand in hand with the manometric examination should go the determination of urea, indican, and the acid-titer of urine in order to determine the proteid-tolerance of our hyperpietics. Among the end-products of proteid metabolism are uric, sulphuric and phosphoric acids, insufficiently neutralized by the mineral bases introduced with the food, if ample vegetables and fruits are not provided. This free acid will tend to disturb the normal neutrality of the blood and the organism will use its most powerful base, ammonia, withholding it from urea formation, and draw on its bicarbonates, monophosphates and diphosphates. The carbonic acid, being the weaker acid, becomes insufficiently transported to the lungs. Carbonic acid has high pressor qualities and enters, as such, distinctly in the hypertension of toxemia of pregnancy and of diabetes. What influence carbonic acid has on the production of hypertension and on the maintenance of normal pressure may be learned from the recent investigations of surgical shock in laparotomy by Henderson; it is demonstrated that the peritoneal serosa gives off free carbonic acid, especially into the moist, warm atmosphere of the so-called protective hot towels. In other words, it is the amount of reserve base which will determine in part the higher or lower tension of the circulation. To reduce this acidosis and to provide alkali freely by vegetable foods and soda in various ways is our task. One routine way is the administration of alkaline laxatives, since it has been demonstrated that alkalinity of the intestinal contents increases putrefaction, and since the products of this process have high pressor qualities, it is better to give non-alkaline laxatives, when indican is abundant in the urine. I have found it of distinct benefit, in cases in which the introduction by mouth of alkali increases the flatulency, to administer it by rectum once or even twice a day.

There is another side to this no-meat question: What is the patient's digestive power of meat, both in stomach and by pancreas? In achylia or subacid gastritis, hydrochloric acid will be of advantage, and the presence of striated meat fiber in the stool will point in the same direction. A frequent coeffect of laxative medication is the hurrying of albumoses into the realm of the colon bacillus, which thrives on albumoses and does not subsist on peptones; therefore, it is our task to give laxatives either early before breakfast or well after the height of digestion. *Qui bene purgat, bene sanat.* Those with the stigma of high tension on them, who suffer from dull headache, nervousness, vertigo, slight oppression in the chest unless their bowels moved that day, often at the age of hygienic introspection abandon their laxatives and take up some method of a most laborious and even ludicrous nature, e. g., a sudden change to coarse vegetable diet, the harder and tougher the better, uncooked in preference to anything, or the use of large amounts of olive oil or butter, or the keeping of regular hours for protracted morning visits to the toilet spent in prolonged straining efforts at the stool, with a rise of abdominal pressure as a consequence. These people should go more carefully in their conversion and not throw their pills away.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

So widely spread is the knowledge of what the lactic acid bacillus will do, that I shall merely pass the subject with endorsement and commendation.

It is necessary that the intra-abdominal pressure shall be slightly positive, through the activity of the abdominal muscles and diaphragm under control of the respiration center. Whenever the intra-abdominal pressure rises to excess, three things will happen: first, a high stand of the diaphragm, this very valve of life, so wonderfully assisting the rising of blood in the mighty vena cava, with reduced downward inspiratory excursion, which means lessened aspiration on the cava; second, the resistance to the venous inflow from the extremities into the common iliac; third, a rise of blood-pressure in the splanchnic arteries caused by compression of the venous splanchnic area. All this takes place provided the heart is powerful. Clinically, this condition is manifest through slight dyspnea, moderate hypertension, aching limbs, torpid liver and catarrhal gastritis. When, in later stages, the heart has lost in tone, the peripheral pressure will not climb through reduced systolic ventricular output. Now, this contrast in influence on blood-pressure, dependent on whether the heart is in tone or weakened, is seen in many instances; even the same agent being a pressor or depressor in the same individual according to its quantity and duration. A hot bath will raise the pressure for the first ten minutes, and if prolonged the pressure will fall. Muscular overexertion in the racer will raise the pressure from five to ten points, and will let it sag down ten to twenty points through heart exhaustion. Tobacco to slight excess will raise the pressure, in toxic doses it will depress. Alcohol in relatively smaller doses in youth will raise pressure through heart stimulation, while in age it will through equalizing relaxation lower pressure—provided the glass be filled and emptied with wisdom, which age provides. By this relative contract in end-results of similar causes, depending on the tonicity of the heart, we must explain why the very advice we give our hyperpietic past the age of 40, with still vigorous heart, may have to be reversed later in life. The wise man at 40 saves, the wise man at 60 spends.

Even without the use of the fluoroscopic screen we can often demonstrate the high stand of the diaphragm by a fine atelectatic crepitus at the right base posteriorly.

Ample indication for treatment of this condition is given in the following causes of high intra-abdominal pressure:

1. Abundant food intake.
2. Gorged liver.
3. Chronic loading of a distended colon.
4. Gas in stomach and colon.
5. Omental fat.

The regulation of diet means a restriction in amount of sufficient caloric value, well above Chittenden's penurious level; a diet adapted both to the secretory and motor functions of the individual stomach, with especial caution against the unyielding coarse food fad and the surplus amount of liquid taken by people who are washing their system; regulating the bowels with or without laxatives, moving them in the forenoon and relieving the colon of gas in the evening by a warm enema; further attention to flatulence with the habitual use of carminatives, including the sharper spices, where kidney and bladder do not forbid their use; massage of the abdomen, circumduction of the thigh, possibly the application of the sinusoidal current, for which a very beneficial effect on intestinal atony is claimed.

In dealing with general obesity or more localized embonpoint, a good deal of caution is needed; not so much at the disappearance of the fat do we aim as at the timely prevention of its formation. When the abdominal parietes have been first comfortably filled for years, and thereafter uncomfortably stretched for some more years, the intra-abdominal circulation adapting itself more or less to it in the meanwhile, what will happen by energetic underdieting and massaging? Though the diaphragm will be greatly freed in its excursions, the flabby abdominal wall will give insufficient support and a tendency to a low intra-abdominal pressure will be manifest with a hindrance to expiratory excursion. This low intra-abdominal tension, accompanied by a feeling of exhaustion and early fatigue in our advanced and overtreated hyperpietics, is a far more difficult matter to deal with. The inferior cava output is retarded and the venous splanchnic area remains gorged, with flatulence and indigestion as a result, only compensated by a rise of pressure in the splanchnic arteries, thereby throwing back the work on the already overburdened heart. So, in a measure, we should endeavor, in spite of hypertension, to overfeed our lean patients, not forgetting that many thin people, when hyperpietic, are often big eaters and mysteriously powerful alcohol absorbers.

As hypertension is due to a narrowing of the total cross-section of the blood-channels, any change in one of the large areas of circulation will have its decided influence, especially in the areas of the skin, the musculature, and the abdominal viscera.

Within bounds of reason an ample amount of outdoor exercise is beneficial to hypertension; I emphasize a one- or two-mile constitutional before retiring, depending on the heart's tonicity and reserve force.

Warm bathing is very beneficial, both morning and evening, with cold sponge or shower thereafter; and with care, we can make use of the depressor influence of the warm carbonic acid and brine bath, which increases the pulse volume and, through opening the skin-circulation, reduces hypertension. Unless the favorite cold morning bath be followed by reaction, it distinctly harms by tightening the skin-circulation.

Most important of all, however, is that enormous territory under control of the splanchnic nerves; so manifold here are the various evidences of disturbance and of consequent adaptation, that only minute individual observation will enable us to foretell safely the detailed influence of the most common happenings of daily life. To gauge the pressor or depressor influence of a meal, depending on quantity, quality and company; of a cigar or more cigars, of wine and more wine, taxes our individualizing acumen heavily in daily practice. While restriction or complete withdrawal of coffee, tea, alcohol and tobacco seems the safer plan, I am deeply convinced that ever since hypertension became the slogan, much wholly unnecessary privation has been forced on our patients. We cannot point out emphatically enough that arteriosclerosis and hypertension are not congruent; that hypertension particularly in interstitial nephritis and cerebral arteriosclerosis is compensatory and should be very carefully dealt with, and that the involutionary arteriosclerosis of the aged, as well as some forms of toxic (syphilitic) arteriosclerosis, is often unaccompanied by hypertension.

Extremely important, but almost common place, is the necessity for liver regulation. If I were to be left with only one drug to treat our disturbance under consideration, I should choose calomel.

There are influences productive of chronic hypertension which are to be mastered only by the intelligent conduct of our patients. It seems beyond doubt that mental overactivity stimulates both pituitary gland and adrenals which throw pressor substances into the circulation. What lack of sleep will do, and the absence of relaxation to the brain (which is the characteristic of worry), what influence on hypertension must be attributed to the well-known, though ill-admitted fact, that libido sexualis, especially in man, is kept overstimulated in city life, can only be presumed. All considerations combined, it seems that hypertension has to be met and treated more during the hours the patient is away from work than when he is at it. It is well-nigh impossible to divert the mighty current of business life, as long as ambition is met by limitless opportunity and the multifarious enjoyment of so-called excitement can be bought only by overstraining the earning power.

As to the hours of sleep, it should be better understood that carbonic acid is of high pressor power, that sleep in ill-ventilated rooms will interfere with metabolism during one-third of our life-time, a time additionally spent in the digesting and assimilation of the heaviest meal of the day. Invariably, for reasons already given, people with hypertension would do better to eat light evening meals with ease thereafter for a few hours, then take a moderate amount of physical exercise, a warm bath, perhaps a warm enema, and sleep in a warm bed with the windows wide open.

A few remarks on drugs follow: Do iodids act through reduction of viscosity of the blood (Romberg) or through thyroid stimulation? Or does the thyroid act through its iodin in organic compound? I cannot say. We know that they do reduce headache and precordial pain; they do not lower the blood-pressure in advanced hypertonic arteriosclerosis; they do everything in syphilitic arterial disease. They should be given with great caution, since Krehl's warning, in cases which show thyroid enlargement, as it has happened too often that a daily amount of 15 gr. of the potassium salt during two weeks caused very rebellious thyroidism. As iodids have to be continued for long periods, an alternation, as Elsner advises, from the sodium through the strontium and rubidium to the potassium salts will be commendable. Sajodin has been well tried; I do not care for it.

Of decided benefit is theobromin, a dimethylxanthin, a congener to caffein, a trimethylxanthin. Xanthins are pressors, still through direct stimulation of the renal tubar epithelium (if this be not diseased) in large amounts they cause a fall in blood-pressure. Diuretin acts somewhat similarly. Ever since Huchard introduced the theobromin, we have found it potent in angina and anginoid states up to 7½ gr., well distributed during the day.

Though nitrites relieve anginoid suffering they do not always do so by a general lowering of blood-pressure. After using sodium nitrite, I have repeatedly heard good reports from my patients. These reports were accompanied by higher manometric readings. MacKenzie's observation is instructive. During an attack of angina with a pulse-pressure of 190, amyl nitrite gave instant and complete relief, the pulse-pressure rising to 200. This change evidently denotes the comparative prevalent action on the coronary arteries. Still we must be aware of an angina with low tension due to dilatation of myocarditis or even aortitis. Their excessive dilatation of the cerebral vessels limits their use in hyperpietic nosebleeds. Erythrol tetranitrate I have given zealously, but had to reduce the doses greatly to prevent the violent headaches so often caused by it. An advantage of the nitrites is in their combination with the tonic cardiacs, if needed. Aconite is of noted help in the excessive hypertension and pounding heart in toxemia of pregnancy. Moreover, double drop doses during the day have given great relief without perceptible harm to the heart.

Chloral, veronal and medinal are reliable agents to procure sleep when attacks of vertigo, dyspnea and pounding heart make the night a time of horror, and chloral may be given in effective doses; perhaps too often our patients fail to receive relief, which is withheld from them by our fear of doing harm. From year to year a new hypnotic comes on the market, which surpasses all its predecessors in effectiveness and absence of depressing effects on the heart. But it is just this depressor effect of the chloral group, which aids in combating the dyspneic unrest, which robs the patient of his sleep. Small doses of chloral during the day are very helpful by their depressor effect.

In this respect I would add that in the senile heart, both with and without hypertension, digitalis is an ideal drug and should not be withheld on account of its pressor power. A good deal of this hypertension, already compensatory, is due to venous stasis, with rest, massage, and partial depletion; the use of digitalis for a few days, guarded by some iodid or nitrite, will tone the myocardium and bring decided improvement. The use of bromids for three or four days at a time will help. With thiosinamin, fibrolysin and sulphocyanite of sodium I have only a bowing acquaintance. And very recently, on Rumpf's recommendation, I have begun the application of high tension oscillating currents which can easily be given as a house remedy.

As in the degenerative changes accompanying secondary arteriosclerosis, the deposit of calcium salts adds to the rigidity of the artery, it has been deemed well to reduce the lime intake, which means the exclusion of hard water, the theoretical limitation of eggs, cheese, rice, asparagus, carrots and milk. On these grounds, strontium or sodium lactate is given. One of the latest drugs, sulphocyanite of sodium, derives its supposed effect from its calcium dissolving potency.

A practical question is: How does altitude influence hypertension? It is as yet hard to answer, though, in rough outline, there is an apparent parallelism between atmospheric pressure and blood-pressure.

In our part of the country, we acquire the necessary information by sending our people on trial trips to any altitude desired; again it all depends on the heart's tonicity.

When the crest of this wave of hypertension, which has struck our profession, will have passed leaving in its wake many a shattered notion, a flotsam and jetsam of sphygmomanometers, broken cuffs and pressure records, the level of our useful knowledge will have come up to a more adequate management of this pathologic condition. May we learn and teach not to grow old before our time, for growing old before one's time is what hypertension means. To depress hypertension in the aged is to take the wind out of his sails, which carry his life-boat into the haven of rest; to reduce the hypertension in the man of 45 is to save him from shipwreck on the banks and cliffs of the very Golden Gate of mature life.

908 West Eighteenth Street.

ABSTRACT OF DISCUSSION

Dr. L. Duncan Bulkley, New York City: I see a great deal of high blood-pressure in connection with a variety of diseases of the skin; of course there is a far larger number of skin patients who are anemic and with low arterial tension. I see many patients, for instance, with ordinary eczema, from over-eating and drinking, with full, bounding pulse, so that I am constantly having to combat high blood-pressure. I want to bring one therapeutic measure before you which I find to be of the greatest practical value, and have only to say that if you do *not* find blood-pressure lowered by the treatment recommended I should be extremely grateful to be notified. This consists in a very radical change of diet, which is often quite a surprise to many patients. I appreciate all the features, for I myself have been through it a number of times. Some five years ago I conceived the plan when called to treat a very acute bullous eruption, becoming hemorrhagic, in a plethoric man, with a throbbing pulse, and since then have employed it in many cases and published a paper concerning it, which some of you may have seen. My desire was to cut off all nitrogenous intake, and so I told the patient to take nothing at all into the stomach for five days but rice boiled in water, and white bread, with much butter on both (no milk or sugar), and only pure water to drink, hot or cold, but not iced. The result was remarkable; the blood-pressure lowered at once, in three days the pulse was soft, and the threatening eruption subsided almost entirely. I have practiced this myself on three occasions and know that one can stand it and feel immeasurably better under it, as I have also observed in dozens of cases. I have the rice eaten with a fork, masticated thoroughly, in order that the saliva may be well mixed through it. Boiled rice has practically no nitrogenous value, white bread little, if any, and butter has none. I had my own urine analyzed before and after subsisting on this diet for five days; I am a uric acid subject and neurotic. I had noted the amount of urea and uric acid before the dietary course; I then took the diet for five days and the urine actually showed more uric acid after my not having any nitrogen for five days than it contained before the diet, showing a relief to the system by the abstraction of effete nitrogenous matter from the tissues. In my own case I had an acute vesico-bullous eruption, mainly on the hands. The second day of this diet the itching was gone and within five days the eruption had disappeared. My treatment consists of four articles—boiled rice, with little salt, white bread, butter on both, and water. Some have kept it up for two or three weeks and thrived well. I wish I could talk a minute more about the value of mercurials in lowering blood-pressure; there is no question that they are of great value in reducing hypertension.

Dr. William B. Snow, New York: Dr. Visscher has considered most of the general features and associated conditions; but it seems to me that more stress should be laid on the study of the relation of the alimentary tract as a cause of hypertension. Hypertension is undoubtedly caused by toxins which are the products of intestinal flora. Arterial degeneration is undoubtedly due to protracted hypertension. A definite study of arterial tension requires the sphygmomanometer for two reasons: first, to know accurately the degree of tension, and second, to observe the results of treatment. The kind and quantity of food consumed together with the associated character of mastication and digestion determine the arterial tension in most cases. The victims of hypertension are usually large consumers of animal food. Individuals who lead a simple life, eating small quantities of food, often reach sixty years of age with a normal tension of 120 mm. On the other hand, young adults who are large consumers of food are often found with pressures of 160 to 180 mm. The man who leads a quiet life must eat with moderation. Diet and exercise must balance. I find that hypertension is not as a rule compensatory, but arises from auto-intoxication, and is part of the symptom-complex, which will lead to arteriosclerosis. The following case in a man 55 years of age will illustrate the importance of exercise. His arterial pressure was 210 mm. He was a man about town, living a life of pleasure, having the best of all good things. High frequency autocondensation reduced the blood-pressure to 130 mm. within one month, when I put him on active exercise. The man went through last summer with a pressure that did not exceed 145 mm. He frequently played four games of tennis in succession, and is now in good condition, taking little treatment and no drugs. The d'Arsonval method of treating hypertension is one of the greatest boons to humanity. I have constantly under observation a goodly number of cases who are on the verge of apoplexy in whom a pressure of between 130 and 150 mm. is maintained with occasional treatment, with the high frequency current. This is accomplished without depressing the heart, as has been demonstrated in the treatment of a person in my own house every day, in whom the pressure was 210 mm. and irreducible, owing to general sclerosis. Another patient had been in bed most of the winter suffering from pulmonary edema due to mitral insufficiency with hypertension. He had had three hemorrhages with incessant cough and expectoration of bloody mucus. His pressure when he came to me was 210 mm. Under alternate day autocondensation treatment (no drug) the pressure rapidly fell to 130 mm. He is now well, without cough or dyspnea and his pressure is now maintained below 140 mm. with one autocondensation treatment weekly, with no other treatment.

Dr. L. G. Visscher, Los Angeles: I am grateful for Dr. Bulkley's suggestions to lower blood-pressure by his exclusive diet, and to Dr. Snow for his information about the d'Arsonval treatment. I cannot agree with this speaker when he doubts the compensatory nature of hypertension. Depressing drugs or measures, especially in older subjects, have, in my experience, caused weakness, very hard to overcome; it is necessary to get up a certain balance of welfare. Dr. King thinks well of calomel; so do I, as I rather boldly stated. Physical rest I do not consider so useful as moderate and well regulated exercise. As to the cold shower, of short duration, after a warm bath, I maintain that it assures the reaction without which this measure were harmful. Cold baths I consider harmful.

Desiccation as a Means of Disinfection.—The Indian, who, instead of embalming and burying his dead friend, hangs the body under a tree exposed to the air, makes use of the property of desiccation, which, as is well known, is very efficient in arresting decay and is the basis of a modern patent for keeping yeast. Earth is a very powerful deodorant and will also act as an antiseptic; the gases given off by decaying bodies are absorbed and thus the burying of a body under proper conditions may be regarded as an efficient means of disinfection. The use of fire for cremating bodies undergoing decay or likely to cause a nuisance is, of course, an illustration of the employment of heat for the destruction of micro-organisms.—W. Dreyfus in *Jour. Am. Pub. Health Assn.*

EXPERIMENTAL MEASLES IN THE MONKEY WITH SPECIAL REFERENCE TO THE LEUKOCYTES *

LUDVIG HEKTOEN, M.D., and H. E. EGGERS, M.D.
CHICAGO

In a series of recent articles Anderson and Goldberger[1] report the results obtained on inoculation of monkeys with measles by means of blood from early cases of human measles and in other ways. The reactions described by them as appearing after an incubation period of six days and longer, consist essentially in a short fever with or without distinct macular rash.

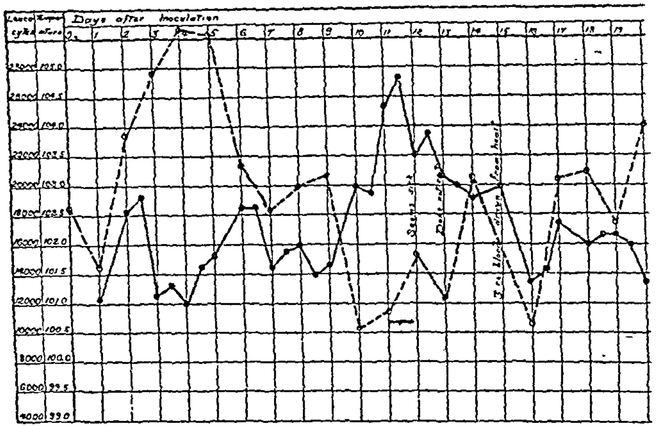

Chart 1.—Temperature and leukocyte curves of Monkey 5. Solid line = temperature. Broken line = leukocytes.

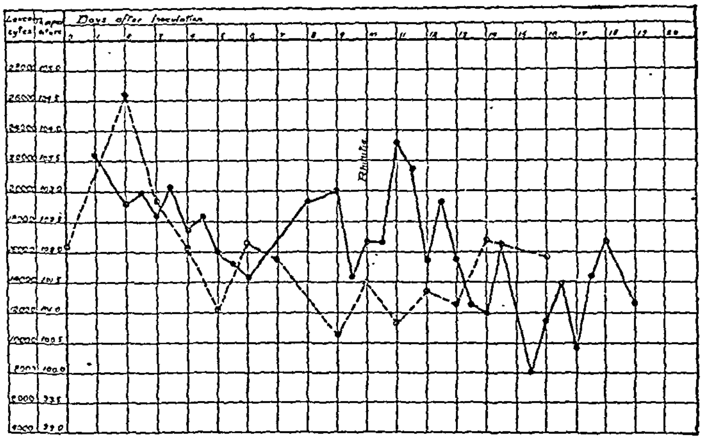

Chart 2.—Temperature and leukocyte curves of Monkey 2. Solid line = temperature. Broken line = leukocytes.

During the course of the experiments the results of which are given briefly in this article, special study was made of the leukocytes of monkeys (*Macacus rhesus*) after the injection of measles blood.

Monkey 5 (Chart 1, Table 1).—The blood was obtained from M. Z., aged 23, thirty hours after a typical measles rash began to make its appearance. Three c.c. of blood were withdrawn from the elbow and mixed with 5 c.c. citrate-salt solution (1 per cent. sodium citrate in physiologic salt solution); one-half of this mixture was injected into the heart and the other half into the peritoneal cavity of the small rhesus monkey about two hours after withdrawal of the blood.

Chart 1 shows that on the eleventh day there developed a rise in temperature (rectal) which lasted about three days. At this time the animal seemed sick, but there was no recognizable rash, no coryza, no conjunctivitis. There was, however, a distinct fall in the total number of leukocytes during these days, and the relative participation of the different forms of leukocytes in this fall is shown in Table 1, which gives the differential counts. The number of red corpuscles and the hemoglobin appeared to remain normal.

As regards the differential counts in the monkey, it may be well to state at this point that even in the apparently normal animal they show great fluctuations without apparent assignable cause, and hence it is difficult to draw accurate deductions from them. The blood of all of the monkeys showed *relatively* high proportions of lymphocytes as compared with human blood and this, in spite of the fact that the cells of the so-called "large lymphocyte" type—cells with a sharply defined nucleus and abundant basic-staining cytoplasm—were enumerated among the large mononuclear cells, inasmuch as differentiation between them and typical large mononuclear cells is extremely difficult.

As it was not wished to risk the life of the animal too soon, the withdrawal of blood from it was postponed until the fourteenth day when 3 c.c. were taken by puncture of the heart, mixed with 5 c.c. citrated salt solution and injected intracardially and intraperitoneally in Monkey 2.

TABLE 1.—LEUKOCYTES IN MONKEY 5

		Differential Count.						
			—Lymphocytes and Mononuclears.—					
No. Days After Inoculation.	Total No. of Leukocytes.	Neutrophils.	Lymphocytes.	Mononuclears.	Lymphocytes and Mononuclears.	Eosinophils.	Basophils.	Remarks.
	18,700	50.7	30.2	17.0	47.2	1.2	0.8	Inoc. with 3 c.c. measles blood.
1	14,600	58.4	27.3	10.7	38.0	2.9	0.7	....
2	23,400	49.0	33.4	15.9	49.3	1.5	0.2	....
3	27,900	41.0	35.3	22.4	57.7	1.0	0.3	....
4	32,100	24.6	70.6	4.5	75.1	0.3	0.0	....
5	30,400	32.3	45.8	20.6	66.4	1.0	0.3	....
6	21,200	60.1	23.5	16.4	39.9	0.0	0.0	....
7	18,300	55.4	32.7	11.8	44.5	0.2	0.0	....
8	20,000	44.0	35.7	19.0	54.7	1.0	0.3	....
9	20,800	51.2	34.1	13.4	47.5	1.0	0.3	....
10	10,400	25.0	57.4	14.1	71.5	2.5	1.0	....
11	11,800	38.6	54.6	5.8	60.4	1.0	0.0	Looks ill.
12	15,200	39.0	45.3	13.9	59.2	1.0	0.8	Temp. 104.4 F.
13	12,300	24.6	60.2	12.9	73.1	2.0	0.4	....
14	20,400	57.6	33.7	6.7	40.4	1.0	1.0	3 c.c. blood drawn from heart.
16	10,500	28.0	53.2	12.6	65.8	4.3	1.9	....
17	20,100	41.0	43.5	11.6	55.1	3.4	0.5	....
18	20,800	40.3	50.7	7.8	58.5	1.0	0.3	....
19	17,600	37.7	50.4	10.7	61.1	0.8	0.4	....
20	24,000	49.8	36.8	12.2	49.0	1.2	0.0	....

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* From the Memorial Institute for Infectious Diseases, Chicago.

[1] Pub. Health Rep., 1911, 26, pp. 847, 887; The Journal A. M. A., July 8, 1811, p. 113, and Sept. 16, 1911, p. 971.

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CARBOHYDRATE TOLERANCE AND THE HYPOPHYSIS CEREBRI

Noteworthy advances have been made in the last few years in elucidating the problems relating to the physiology and pathology of the hypophysis. Among these may be mentioned the favorable results of the partial removal of this gland in certain cases of acromegaly, and the demonstration by Paulesco and by Cushing[1] and his co-workers that the total extirpation of this gland in animals is rapidly followed by death, whereas the partial extirpation is followed by very characteristic effects on growth and development. The latter results afford conclusive evidence that at least some cases of this disease are due to a hyperfunctioning of the hypophysis, something which has long been suspected, but not previously definitely proved.

One of the most suggestive of the recent contributions to the knowledge of the physiology and pathology of the hypophysis is a paper by Goetsch, Cushing and Jacobson[2] on carbohydrate tolerance and the posterior lobe of the hypophysis. The results recorded in this extensive experimental and clinical study not only are of great theoretical interest, but promise to be of much practical value also.

It has long been known that glycosuria frequently occurs in cases of acromegaly; Borchardt, in 1908, stated that in 176 cases it had been reported as present in sixty-three and that there was a lowered assimilation limit for carbohydrates in eight others. In none of twenty cases of acromegaly or gigantism studied by Goetsch, Cushing and Jacobson, however, was glycosuria found. On the contrary, nearly all of these patients showed an entirely unsuspected condition, namely, a markedly increased tolerance for carbohydrates; that is, they reacted with glycosuria only to amounts of sugar much in excess of those producing glycosuria in normal individuals. Their condition was thus the reverse of that described by Borchardt.

An explanation of these apparently contradictory results is found in these authors' experiments on carbohydrate metabolism in partially hypophysectomized animals; these usually showed immediately after the operation a transient glycosuria, which, however, soon yielded to a markedly increased carbohydrate tolerance. The latter was readily reduced to, or below, the normal by the administration of extracts of the posterior lobe of the hypophysis. In other words, excess of posterior lobe secretion such as results from the administration of the gland or by the mechanical expulsion of its secretion during an operation on the gland leads to glycosuria or lowered carbohydrate tolerance; diminution of secretion, such as results from the removal of the gland, or from disease, leads to greatly increased carbohydrate tolerance.

These observations afford a satisfactory explanation of the varying picture of carbohydrate tolerance seen in acromegaly; in the early stages of this disease there is a hyperfunctioning, not only of the anterior lobe (which leads to the skeletal changes), but of the posterior lobe leading to glycosuria; in the later stages there is a hypofunctioning of the posterior lobe leading to increased carbohydrate tolerance.

Of more interest, because frequently overlooked, are the cases in which there is a primary hypofunctioning of the posterior lobe. According to Goetsch, Cushing and Jacobson, this may result from direct pressure by interpeduncular tumors, by growths originating in the lobe itself, and by the distant effects of a tumor causing an obstructive hydrocephalus and thus damming back the fluid medium carrying the posterior lobe secretion. The same symptoms of hypopituitarism occur in such cases as are seen in later stages of acromegaly. There is a very high tolerance for sugar, marked adiposity, due to a lowered consumption of sugar, and subnormal temperature, perhaps due to deficient oxidation. The administration of posterior lobe lowered the carbohydrate tolerance; by giving sugar in the amounts usually just sufficient to cause glycosuria in comparable normal individuals (about 2 grams of glucose or 1.4 grams of levulose per kilogram) and administering the posterior lobe in increasing doses until glycosuria was produced it was possible to determine the proper therapeutic dose of the gland in such cases.

The relation thus established between the hypophysis (posterior lobe) and carbohydrate metabolism throws light on a number of obscure problems. Thus Cushing and his associates are inclined to believe that the transient glycosurias often seen in cases of fractures at the base of the skull are due to a temporary stimulation of the hypophysis. Some cases diagnosed as diabetes mellitus or, since polyuria is a frequent accompaniment of hypophysis overactivity, as diabetes insipidus, have proved to be due to some factor stimulating the posterior lobe. One of these authors' acromegaly patients had some years earlier failed to pass a life-insurance examination on account of suspected diabetes mellitus; at the time of the second examination not only was there no glycosuria, but there was also an increased carbohydrate tolerance, the earlier hyperactivity of the posterior lobe having given way to a condition of hypo-activity.

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[1] Cushing, H.: The Journal A. M. A., July 17, 1909, p. 249.

[2] Bull. Johns Hopkins Hosp., 1911, 22, p. 165; abstr. in The Journal, July 8, 1911, p. 163.

The determination of carbohydrate tolerance thus promises to be of aid not only in the diagnosis of conditions of dyspituitarism, but also in determining more accurately the character of the derangement. The possible importance of this is evident from the statement of the present authors that they believe diseases of the hypophysis to be as frequent as those of the thyroid.

These studies also serve still further to emphasize the differences between the physiologic activity of the two parts of the hypophysis: the best therapeutic results can be expected only when this fact is taken into consideration.[3]

THE STUDY OF FEVER

It is interesting to watch how the introduction of improved methods of investigation opens up new points of view with respect to disease. At one time it may be the bacterial invader which commands attention when some new technic for the cultivation of micro-organisms is announced; in other cases newly described pathologic lesions become the center of interest; or again the disturbances of metabolism attract notice. This has been conspicuously true in the study of fevers. Although the pathognomonic features of these conditions have long been associated with an upset in the oxidative functions of the body, it can scarcely be said that any clear-cut conceptions of the nature of the disturbances exist. The current teaching assumes that in fevers the decomposition of the foodstuffs and the proteins in particular is different from that which goes on in the healthy organism. The complicating inanition factors in prolonged fever have been emphasized by Coleman[1] and others; but the abnormal conditions created by starvation *per se* have received too little consideration in the past in the study of disease.

The technic of studying the respiratory exchange, which enables one to obtain an insight into the oxidative phenomena of the body, has been highly perfected in the Nutrition Laboratory of the Carnegie Institution of Washington, at Boston. Following in the path of Zuntz and his collaborators, Professor Benedict has rendered more easy and accurate the estimation of the respiratory quotient, i. e., the relation between the consumption of oxygen and the output of carbon dioxid, at the bedside. By means of a modified Benedict apparatus, Rolly[2] has found that the respiratory quotient is not essentially modified during the progress of the febrile state. Furthermore, the relations between various elements in the urine and the tissues show no departure from the normal sufficient to suggest any *qualitative* alterations in the metabolism characteristic of fever. This is a most significant finding inasmuch as it tends, if correct, to indicate that in many pathologic conditions the nutritive derangement, quite contrary to some current conceptions, consists in a *quantitative* exaggeration of normal processes rather than in some unique perversion of the bodily functions as the result of which the processes of oxidation, etc., proceed in entirely new channels.

During the convalescent period, according to Rolly, there may be alterations in the values for oxygen consumption and carbon dioxid production which point to as yet unknown reconstructions in the recuperating organism. The deposition of fat is suggested. A return to normal values may at times not occur until the end of several months. This is quite what might be anticipated. The result of such studies is to make us more careful to distinguish between the direct effects of pathogenic agents and the consequent exaggerations, rather than perversions, of the metabolism to which they may give rise. In other words, physiologic overwork of the organism may be quite as much a characteristic of disease as is an imperfect behavior of the bodily mechanism.

THE PREVENTION OF INDUSTRIAL DISEASE

Industrial diseases are "morbid results of occupational activity traceable to specific causes or labor conditions, and followed by more or less extended incapacity for work." Such diseases come about in two ways: Special industries give rise to their own peculiar ailments; thus result "phossy jaw" among match-makers, lead, arsenic, mercury poisoning, caisson disease and the like. In the second place special industries render the workmen susceptible to certain common types of disease; as when laborers in dust-evolving trades succumb to tuberculosis and pneumonia. Among disease-engendering occupations are glass-blowing; work in cotton factories; the work which young girls must do in the trimming-rooms of packing establishments, at a temperature lower than that generally obtaining in refrigerators; the work of the locomotive fireman, who, when asked how often through his hours of labor he bent his back, answered "just once"; the nystagmus-inducing work of miners; trades inducing specific infections, such as anthrax, and so forth.

Ignorance of the value of measures of safety, and considerations of profit and loss combine in varying proportions to depress the health and take the lives of workers. Whether the employer really saves money, or only thinks he saves it, at the expense of the lives and health of his employees is practically immaterial, except that in the [illegible] must be educated, and in the former he m[illegible]d. The question of the mo[illegible] effective mea[illegible]ith the problem is one wh[illegible] this country [illegible] little to answer.

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[3] Preparations of each of these parts are now available; see New and Nonofficial Remedies, 1911, p. 155.

[1] Coleman: Diet in Typhoid Fever, The Journal A. M. A., Oct. 9, 1909, p. 1145.

[2] Rolly: Exper. Untersuchungen ü. d. Stoffwechsel im Fieber und in der Rekonvalescenz, Deutsch. Arch. f. klin. Med., 1911, ciii, 93

nurse's cell, elevated by ½ yard, so that she has good oversight over the cells. Each patient's cell is, in fact, a ward; it is over 4 yards high and nearly 3 yards square. There is ample provision for disinfection in this station. If, however, a child is found to be non-infectious, it is sent to the general waiting-room, where similar diseases are grouped and treated together. A small dispensary gives remedies at a nominal cost or free of charge to those in bad circumstances. The in-patients are located on the two upper floors of the clinic. Wards with from 6 to 14 beds each are provided. A lecture hall for 200 students with special arrangements for the demonstration of children's diseases, a library, physicians' and nurses' rooms, a small infants' ward for seventy babies, "boxes" or *couveuses* for six prematurely born babies, and a hall for wet nurses, fill up the large building, which has sixty six beds for children. A small photographic and gymnastic department also belongs here. The pavilions for diphtheria and scarlatina are alike, each having twenty-two beds, and provide arrangements for the change of clothing of the physicians and nurses, and for disinfection. A subterranean passage permits of communication with the main building.

The clinic of Professor Chiari, the last of the trio, is smaller than the others. It has only fifty beds. Special attention has been paid to the lecture room and to the arrangements for teaching, as in this branch (laryngology) each student must see the cases separately. Twenty persons can be examined at the same time in the classroom, and four operations can go on simultaneously in the surgery. The arrangement for sterilization of the instruments (mirrors) used is simple and ingenious. They are placed in a cup made of wire, which is [illegible] into a receptacle containing constantly boiling water. [illegible] this receptacle the cup may be taken whenever wanted, and placed in another solid nickel cup at the table of the physician; a double set of instruments makes possible rapid, uninterrupted working. Operative classes, diagnostic classes, as well as regular treatment go on without delay, as there is plenty of space and material. More than 12,000 fresh cases are seen here yearly, so that the work done is enormous. Special operation theaters are provided for the larger operations, as well as a laboratory and an x-ray department, and a room for bronchoscopy and esophagoscopy.

These clinics are really the most modern and up-to-date institutions, forming the results of cooperation of experimental builders, architects and scientists with the respective professors, so that the outcome, adapted to the highest expectations, is the best that could be wished. For years to come these clinics will be the models for hospital building, a Mecca for all hospital committees. But there is a drawback; they have been very expensive, and a single patient costs the hospital nearly $1.50 a day, as the upkeep and management of the clinics is very dear. Heating and lighting is on the central system. Hot air is generated in the machine-room, where also electric power is generated for the numerous lamps. Only in the throat clinic is gas used for the lamps at the examination tables. A liberal number of nurses, a large medical staff and an ample outfit tend to increase the constant cost of th otherwise excellent clinics.

Deaths

David Richard Fly, M.D. Kentucky School of Medicine, Louisville, 1894; elected president of the State Medical Association of Texas at its 43rd annual meeting at Amarillo, May 11, 1911; died in St. Joseph's Sanitarium, Fort Worth, November 30, aged 46. Immediately after graduation, Dr. Fly entered general practice in Fort Worth and on the organization of the Medical Department of Fort Worth University, he became demonstrator of anatomy and chief of clinics of that institution. He was also city physician of Fort Worth from 1895 to 1897. In 1900 Dr. Fly was obliged to remove to the Panhandle of Texas on account of ill health, and located at Amarillo. He was made local surgeon for the Rock Island and Fort Worth and Denver Railroad and consulting surgeon to the Santa Fe System; for two years after his removal to Amarillo, Dr. Fly was lecturer on physiology and hygiene in the Amarillo College. He was instrumental in locating the Hospital of the Sisters of the Incarnate Word in Amarillo, and was a member of the staff of that institution. For many years Dr. Fly was interested in organized scientific medicine; he was one of the founders of the old Panhandle District Medical Association and for six years its president. Since 1903 he has been councilor of the Panhandle District and for a year served as chairman of the committee on public lectures of the association and also as chairman of the committee of legislation and municipal regulation of the Texas Antituberculosis Association.

Alfred Cochran Lambdin, M.D. University of Pennsylvania, Philadelphia, 1866; a veteran of the Civil War and a practitioner of Germantown until 1870, when he gave up practice to enter newspaper work; first managing editor of the Philadelphia *Times*, then associate editor of the *Times-Public Ledger*, and since 1904 editor-in-chief of the *Philadelphia Public Ledger*, widely known as a dramatic, art and musical critic and writer; died at his home in Philadelphia, November 8, from heart disease, aged 65.

Francis Schill, M.D. University of Freiburg, Germany, 1881; *a member of the American Medical Association; treasurer of* the Cambria County (Pa.) Medical Association; a member of the board of managers and of the consulting staff of the Conemaugh Valley Memorial Hospital; a member of the board of health of Johnstown; assistant surgeon of the One Hundred and Seventh Ohio Volunteer Infantry during the Civil War; died at his home, November 14, from senile debility, aged 80.

John Boynton Palmer, M.D. New York Homeopathic Medical College, New York City, 1892; professor of diseases of the nose and throat in the New York Medical College and Hospital for Women; attending physician to the New York Ophthalmic Hospital and consulting physician to the Volunteer Hospital and the Hospital of the Five Points House of Industry; died at his home in New York City, October 30, from arteriosclerosis, aged 47.

Lewis Jackson Baker, M.D., Jefferson Medical College, 1875; formerly a member of the American Medical Association; a pioneer member and formerly president of the Wapello County (Ia.) Medical Society; for several years city physician of Ottumwa; died at the home of his daughter in Somers, Mont., November 8, from cerebral hemorrhage, aged 61.

George W. Roberts, M.D. Rush Medical College, 1869; a member of the American Medical Association; for more than forty years a practitioner of Albany, Wis., and for several years vice-president of the Exchange Bank of Albany; died in a hospital in Madison, November 8, from septicemia, following an operation for abscess of the leg, aged 70.

Frank W. Graham, M.D. St. Louis College of Physicians and Surgeons, 1883; director of the White Cloud Hospital and Sanatorium, Ludington, Mich.; for four years mayor of Ludington and president of the board of trade for two terms; died suddenly in a store in Ludington, November 6, from cerebral hemorrhage, aged 55.

David Putney Goodhue, M.D. Dartmouth Medical School, Hanover, N. H., 1863; a member of the American Medical Association; and president of the New Hampshire Medical Society in 1895; acting assistant surgeon, U. S. Navy during the Civil War; died at his home in West Springfield, N. H., November 5, aged 73.

George Allen Brug, M.D. Medical School of Maine, Brunswick, 1875; a member of the Rhode Island Medical Society; for many years a practitioner of Providence, R. I.; major and surgeon of the First Rhode Island Light Infantry; died at his summer home in Chilmark, Mass., November 12, from cerebral hemorrhage, aged 58.

Thomas H. McGann, M.D. Dartmouth Medical School, Hanover, N. H., 1876; a member of the Medical Society of the State of New York, and for many years a practitioner of Wells, and surrogate and county judge of Hamilton County; died at his home in Gloversville, N. Y., November 8, from myocarditis, aged 59.

John Faraday Oaks, M.D. College of Physicians and Surgeons, New York City, 1871; a specialist on diseases of the eye, ear, nose and throat; for several years a resident of Chicago and later of Dubuque, Iowa; died at his home in Cincinnati, August 11, from cerebral hemorrhage, aged 61.

Hugh Blake Williams, M.D. Tulane University, New Orleans, 1884; a member of the American Medical Association; assistant surgeon to the eye department of the Illinois Charitable Eye and Ear Infirmary; died at his home in Chicago, December 4, from cerebral hemorrhage, aged 51.

Rufus D. Jacobs, M.D. University of Wooster, Cleveland, 1869; Medical College of Ohio, Cincinnati, 1886; of Vinton; a member of the Ohio State Medical Association; fell from a train at Vinton, October 27, and was run over, dying a few hours later from his injuries, aged 78.

Charles Reade Gould, M.D. Dartmouth Medical School, Hanover, N. H., 1866; a member of the American Medical Association; for many years a member of the board of health of Tilton, N. H.; died at his home in that place, November 11, from cerebral hemorrhage, aged 69.

John Joseph McAvoy, M.D. Bellevue Hospital Medical College, 1895; a member of the Massachusetts Medical Society; for three terms city physician of Lawrence, and at one time a member of the board of education; died at his home, November 12, from heart disease.

William D. Barclay, M.D. Hospital College of Medicine, Louisville, 1890; a member of the Missouri State Medical Association; local surgeon at Odessa for the Chicago and Alton Railway; died at his home, November 14, from pneumonia, aged 42.

Alexander Lane, M.D. Rush Medical College, 1895; a well-known colored practitioner of Chicago; once assistant physician of Cook County and a member of the legislature; died at his home in Chicago, November 13, from disease of the lungs, aged 52.

Louis Fleckenstein, M.D. Detroit College of Medicine, 1889; of Vernon; a member of the Michigan State Medical Society; at one time postmaster of Port Hope; died at his home in Detroit, November 14, from cerebral hemorrhage, aged 55.

Harry Victor Harbaugh, M.D. University of Maryland, Baltimore, 1907; of East Newmarket; a member of the Medical and Chirurgical Faculty of Maryland; died in the Cambridge (Md.) Hospital, November 10, from pneumonia, aged 28.

Joseph E. Perry, M.D. University of Tennessee, Nashville, 1887; of Wellborn, Fla.; died in a sanatorium in Atlanta, Ga., November 4, aged 50.

Charles Patton, M.D. Louisville Medical College, 1888; a member of the Indiana State Medical Association and Æsculapian Society of the Wabash Valley; died at his home in Terre Haute, November 17, from heart disease, aged 46.

Joseph Waldauer, M.D. Louisville (Ky.) Medical College, 1894; a member of the American Medical Association; health officer of Warren County, Miss.; died at his home in Vicksburg, November 10, from uremia, aged 48.

Edward R. Close (license, Michigan, years of practice, 1900); for forty-five years a practitioner; a member of the Antrim County Medical Society; died at his home in Bellaire, July 8, from chronic nephritis, aged 77.

James W. Vander Voort, M.D. Medical College of Ohio, Cincinnati, 1863; Bellevue Hospital Medical College, 1869; died at his home in Harveysburg, Ohio, November 11, from cerebral hemorrhage, aged 77.

John G. Knowles, M.D. Vanderbilt University, 1907; of Ninock, La.; died in the Schumpert Memorial Sanitarium, Shreveport, La., May 9, after an operation for intestinal obstruction, aged 32.

Samuel Edward Hawes, M.D. Louisville (Ky.) Medical College, 1881; a member of the Nebraska State Medical Association; died at his home in Fairbury, November 12, from heart disease, aged 51.

James Burl Kelley, M.D. College of Physicians and Surgeons, San Francisco, 1901; formerly of Brownsville, Ore.; died recently at his home in Portland, Ore., and was buried October 30, aged 52.

Osmer Letson (years of practice—six years—Michigan, 1900); formerly an inmate of the Soldiers' Home, Grand Rapids; died suddenly at the home of his daughter in Covert, October 22.

William Thomas Jones, M.D. Jefferson Medical College, 1883; a member of the American Medical Association; died suddenly in his office in Georgetown, Texas, November 11, aged 58.

Bernhard Krause, M.D. University of Göttingen, Germany, 1853; one of the oldest practitioners of Cleveland, Ohio; died suddenly at his home, November 17, from heart disease, aged 80.

Jesse Reagan, M.D. Medical College of Ohio, Cincinnati, 1856; a surgeon of volunteers during the Civil War; died at his home in Plainfield, Ind., November 10, from senile debility, aged 86.

Benjamin Brown, M.D. Medical College of Virginia, Richmond, 1899; formerly a member of the American Medical Association; died at his home in Nokesville, Va., November 14, aged 34.

Edward Sanderson McKean, M.D. University of Virginia, Charlottesville, 1881; a member of the Medical Society of Virginia; died at his home in Goshen Bridge, November 13, aged 60.

John D. Overholser, M.D. Rush Medical College, 1901; of Milledgeville, Ill.; a member of the American Medical Association; died recently and was buried at Milledgeville, November 12.

Elver Garrison, M.D. Barnes Medical College, St. Louis, 1896; a member of the Illinois State Medical Society; died at his home in Greenup, February 9, from cerebral hemorrhage.

Herbert Wallace Hatch, M.D. Cooper Medical College, San Francisco, 1893; of Oakland, Cal.; died in the new Providence Hospital, Seattle, Wash., October 28, aged 42.

David Harlow Riegle, M.D. Starling Medical College, Columbus, O., 1898; died at his home in Kansas City, Mo., October 29, from edema of the brain, aged 40.

Lars P. Jacobson, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1898; died at his home in Kankakee, Ill., November 6, from heart disease, aged 57.

Samuel McCurdy, M.D. Cooper Medical College, San Francisco, 1872; of Santa Ynez, Cal.; died in a sanatorium in Berkeley, October 25, aged 64.

Alfred B. Nash, M.D. University of Pennsylvania, Philadelphia, 1876; died at his home in Frenchtown, N. J., March 13, from tuberculosis, aged 58.

Jason Chaney, M.D. Kentucky School of Medicine, Louisville, 1877; died at his home in Senath, Mo., Nov. 2, 1910, from pneumonia, aged 58.

Charles F. Myers, M.D. New York Homeopathic Medical College, New York City, 1882; died at his home in New York City, August 22, aged 65

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

PRELIMINARY REPORT OF THE COMMITTEE OF THE COUNCIL ON PHARMACY AND CHEMISTRY ON IMPORTANT DRUGS

The Council on Pharmacy and Chemistry, in response to a number of requests, has undertaken the compilation of a list of the admittedly more important drugs which might serve as a basis for instruction in medical schools and in the preparation of examination questions for license to practice. The desirability of laying special emphasis on the really important drugs in teaching and in state examinations has been emphasized by teachers in medical schools and also by members of the National Confederation of State Medical Examining and Licensing Boards, who have gone on record as favoring the restriction of questions in materia medica subjects to a limited list of important medicaments with which all students and practitioners should be thoroughly familiar.

A number of tentative lists of this character have been prepared both in the United States and in England. A composite of these was submitted to a large number of teachers of materia medica and therapeutics, to members of state examining boards, and to others; the consensus of opinions received in reply is shown in the list referred to below; there was practical unanimity in favor of including those titles printed in solid capitals and a large majority in favor of including the others.

Before submitting the list to the Council on Pharmacy and Chemistry for final action the committee is desirous of obtaining still further opinions from active practitioners. For this purpose the list is printed on page 22 of the advertising section of this number of The Journal so that it may be detached without mutilating the reading pages.

Every physician who is willing to assist in the work is invited to draw a line through those drugs included in the list which, in his estimation, are not of sufficient importance to be retained, and to return the page to the undersigned, at the same time sending a list of such drugs as he may think should be added.

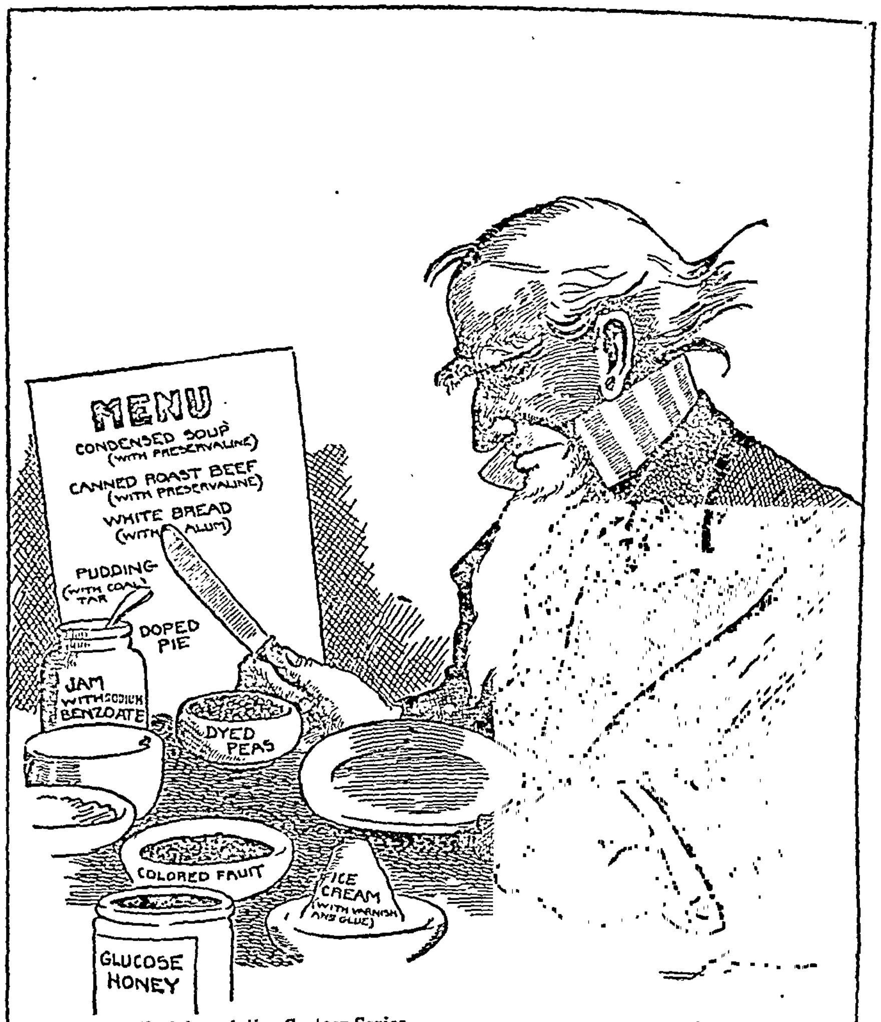
It may be repeated that it is not the purpose to prepare a list of all drugs of value, but simply a list of those which are recognized as being of such importance that all graduates in medicine and all applicants for license to practice may reasonably be expected to be familiar with them.

Reid Hunt, M.D., Chairman, Washington, D. C.
Hygienic Laboratory, 25th and E Sts., N. W.

C. H. CARSON—QUACK

Some Sworn Testimony Regarding His Professional and Educational Qualifications

In the Editorial Department of this issue, we have something to say about the Kansas City quack, C. H. Carson. The conclusions there given are based, in part, on information some of which we are about to give. Three or four years ago, George Creel, the editor of the *Independent*, exposed Carson's charlatanry and fakishness. As a "come back," Carson published statements to which Mr. Creel took exception and which resulted in Carson being sued for slander. Depositions were taken in this case from which we are going to quote somewhat extensively. It should be explained that at the same time that the testimony was being collected in this case a criminal prosecution was being brought against Carson by the state of Missouri, charging him with practicing medicine without a license. This will make clear why Carson refused to answer questions to which no reputable practitioner of medicine would have hesitated to reply. In the matter that follows, Mr. Reed, who speaks occasionally for Carson and on whose advice Carson refused to answer questions, was one of the numerous attorneys employed by this quack to defend him. The matter that immediately follows and in which Carson shows an unwillingness to state the business in which he was engaged, was elicited on direct examination by Mr. Frank P. Walsh. Mr. Walsh was the special counsel appointed by the State Board of Health to prosecute Carson for practicing medicine without a license:



American Medical Association Cartoon Series

Is It Any Wonder I Am Getting the Reputation of Being a Dyspeptic?

CARSON'S TESTIMONY

Question — What is your name?

Answer.—C. Hiram Carson.

Question.—What does the "C" stand for?

Answer.—Just for an initial.

Question.—No name to it?

Answer.—No, sir.

Question. — C. Hiram Carson?

Answer.—That is the name.

Question.—How old are you, doctor?

Answer —I have passed the age of sixty-two. I will be sixty-three on the 22nd day of the present month.

Question.—Where do you live?

Answer.—I live in Kansas City.

Question.—At what place?

Answer.—Twelfth and Washington.

Question.—How long have you lived in Kansas City?

Answer.—Since November, '79.

Question.—What is your business?

Mr. Reed: We decline to answer the question because the plaintiff in this case has instigated a criminal prosecution against this defendant in the Criminal Court of Jackson County, Missouri, charging him with practicing medicine without a license, and the answer, if given, might be used against this witness in the criminal prosecution, and might tend to convict him in that case.

Question.—Do you advertise yourself as a divine healer?

Mr. Reed: That is objected to, and the witness declines to answer for the reason that there is a charge now pending against him in the Criminal Court of Jackson County, Missouri, instigated by the plaintiff in this case charging him with practicing the healing art, and the answer, if given, might tend to convict him of the offense charged.

Commissioner: The question was, Do you advertise yourself as a divine healer?

Answer.—For reasons stated by my attorney I refuse to answer.

Question.—Do you refuse to answer as to whether you advertise yourself as a divine healer on the ground that your answer might tend to incriminate you?

Answer.—Yes, sir.

Question.—Are you a divine healer?

Mr. Reed: Objected to for the reason given before and decline to answer it for the same reason given.

Commissioner:—You decline to answer, doctor?

Answer.—Yes, sir.

Question.—Do you decline to answer the last question on the ground that your answer might tend to incriminate you?

Answer.—I do.

[Carson used to call his institution the College of Psychic Sarcology and at the same time he published an advertising sheet called the *Psychic World*. Part of the questions and answers regarding this publication follows:]

Question.—What is the College of Psychic Sarcology?

Answer (after argument).—It is an institution incorporated under the laws of the State of Missouri, as a philanthropic and educational institution.

Question.—Who is president of it?

Answer.—C. H. Carson.

Question.—Is that you?

Answer.—That's me.

Question.—Who is vice-president of it?

Answer.—R. M. Carson.

Question.—Related to you in any way?

Answer.—She is my wife.

Question.—Who is treasurer of it?

Answer.—Same party.

Question.—Your wife?

Answer.—R. M. Carson.

Question.—Who is secretary of it?

Answer.—I have just stated that; Dr. F. M. Planck.

Question (after argument).—I will ask you if Dr. Planck attends to correspondence for you?

Answer.—He does—write and dictate letters.

Question (after argument).—Does Planck write articles for you for the newspapers?

Answer.—He does not.

Question.—Who writes articles for you for the newspapers? Who do you have in your employ for that purpose?

Answer.—C. H. Carson writes most of the articles for the newspapers. I have no one in my employ to write articles for newspapers.

Question.—In this college you have spoken of, Psychic Sarcology, do you issue some kind of a publication in connection therewith?

Answer (after argument).—For the reasons given by my attorney I decline to answer the question because the answer to the question might incriminate me in a suit now pending before the Criminal Court.

Question.—Did the College of Psychic Sarcology during the present year publish a paper or a magazine?

Mr. Reed: Now we object to that as absolutely immaterial in this case.

Commissioner: Objection overruled.

Answer.—It did not. It published a circular or prospectus of the things that we teach one. Only one issue of that is in existence now.

Question.—What is the name of that?

Answer.—It is called a prospectus of the Carson College of Psychic Sarcology.

Question.—Did you employ any person or persons to write articles for that?

Answer (after argument).—Before I answer that I would like to make an answer to the court,—explanation. This prospectus was a single issue. I dictated the character of the contents and gave it to a stenographer who wrote and furnished me the material for publication in this circular and prospectus.

Question—What was the name of the stenographer?

Answer.—The name of the stenographer that wrote that.—the writer of that was Mrs. Balgue.

* * *

Question.—Do you publish a book, magazine or printing and call it the *Psychic World?*

Answer (after argument).—For reasons stated by my attorney, I decline to answer the question because there is a suit pending against me in the Criminal Court, and my answer to this question might incriminate me.

Question.—Did the College of Psychic Sarcology publish or print a pamphlet or magazine known as the *Psychic World?*

Answer (after argument).—On the advice of my attorney I decline to answer the question for the same reason that I declined to answer the preceding question.

Commissioner: If you decline to answer this you must give the reason for declining.

Answer.—It did not.

Question.—Are you acquainted with the publication called the *Psychic World?*

Answer (after argument).—I am.

Question.—Did you employ any person to write articles, including testimonials of persons alleged to have been cured of diseases by your process, and have said articles published in this publication known as the *Psychic World?*

Mr. Reed: Now we decline to answer that question for the reason that the plaintiff in this suit has caused to be instigated a criminal prosecution against the defendant, and the evidence is not intended to be used in this case, and is not being called for in good faith for use in this case,—is simply asked for the purpose of harassing and annoying the defendant and inquiring into, and because the answer, if given, might be used against him in the criminal prosecution instigated by this plaintiff, and might tend to incriminate him.

[We have referred to the "magnetized" slips of paper humbug. before. Here is what Carson himself admitted under oath regarding this picturesque fake:]

Question.—Do you give your patients slips of tissue paper and tell them if they pin them on their garments it will relieve them of disease?

Answer.—I do not.

Question.—Do you give your patients slips of tissue paper and tell them to apply them to the part affected?

Answer.—I sometimes give my patients a tissue that I prepare for the purpose of being placed on the nerve center at the base of the brain or between the shoulders and pinned there to be worn during the night and removed and destroyed in the morning.

Question.—In what way do you prepare this tissue paper?

Answer (after argument).—The tissue paper is placed between my hands. My hands possess a magnetic and electric power that seems to be transmitted to this tissue. It is placed in an envelope securely sealed, and an absolute statement made of how to use it. The statement is made on the envelope.

Question.—What is the statement of how to use it?

Answer.—The statement says; this is what I say to the patient, "Place one of these tissues between your shoulders at night."

Question.—No matter what disease the patient has?

Answer.—In case of extreme suffering place the tissue over the seat of pain. If you wish to have me state what I have been able to accomplish with it I would like to do it.

Question.—Do you place that on the seat of pain no matter where the pain is or what the character of the pain is, or what the disease is?

Answer.—I do not give these in all diseases. (After argument.) I simply state to the patients in my instructions that if they are suffering from any severe pain place the tissue over the seat of pain,—if the pain is relieved—when the pain is relieved return it where it was formerly placed.

Question.—Where do you get this tissue paper?

Answer (after argument).—It is ordered specially from a wholesale house; I don't remember the name.

* * *

Question—What do you claim that you put into this tissue paper when you pass your hands over it?

Answer.—I have answered that question before, sir.

Question.—Well, answer it again.

Answer.—I have answered that question once or twice. If you will tell me what the fox puts on the ground when he steps on the ground, and the hounds come and follow him I will tell you what I put into the tissue paper.

Question.—What do you claim that power is that you put in that tissue paper?

Answer.—Some call it vital power. Some call it magnetism.

Question.—What do you call it?

Answer.—I only know it gets results. I get the result.

Question.—In every case.

Answer.—In every case, yes, sir. I don't use this in every case, sir.

Question.—If you can get that result, why don't you use it in every case?

Answer.—I use the original hand in the treatment.

[Carson, after telling how he had cured cases of appendicitis by rubbing his hand over the patient's stomach, testified as follows:]

Question.—The real part is rubbing the hands across the stomach?

Answer.—Yes, sir; by using my vital power.

Question.—Do you have to remove their clothing to do that?

Answer.—Sometimes I do, and sometimes I don't.

Question.—Do you put anything on your hands?

Answer.—No, sir.

Question.—Do you ever use vasilin on your hands?

Answer.—Capsicum vaselin.

[The capsicum in the vaselin was responsible, of course, for the tingling sensation which the patient understood was produced by "vital force." The "doctor" also treated eczema.]

Question.—Do you treat eczema?

Answer.—I have treated eczema, but Mr. Creel cannot find, or anybody else, where I claimed that I cure anything. No person has ever been told that I cure anything. I treat successfully all diseases, as to certain diseases the newspapers may make it, but they make it wi[illegible] I claim to treat successfully. I claim to treat [illegible] treated the disease known as eczema. Some [illegible]ul are simply by passing my hands liberally over the form of the disease.

Question.—Any other treatment?

Answer.—Sometimes I might use a very simple form of ointment to protect my hands from the injurious effects of the disease.

Question.—What kind of ointment?

Answer.—Might be sweet-oil.

Question.—Where do you get it?

Answer.—I usually bought it at Guernsey & Murray's.

Question.—Did you put anything in the sweet-oil?

Answer.—Sometimes might use something in the sweet-oil.

Question.—What did you put in it?

Answer.—I don't treat all cases exactly alike.

Question.—When you sometimes put something in it, what did you put in it?

Answer.—I didn't put it in the sweet-oil. I sometimes used a plain, simple ointment.

Question.—What did you put in it?

Answer.—Sometimes I used a simple ointment. There is an ointment I use sometimes; it is called cerate.

* * *

Question.—What was this simple ointment that you put on your hands?

Answer.—It is a preparation called cerate.

Question.—What is it made of?

Answer.—It is a proprietary remedy and the contents of it may not be absolutely known.

Question.—Do you know the contents of it?

Answer.—Do I know the contents? I have my opinion in regard to that. My opinion is that it is very simple, harmless and not very efficient, and would not be efficient in the hands of a doctor as a remedial agent. For the purpose I use it for, it seems to produce the result. It is a proprietary remedy.

Question.—What is your opinion of its contents?

Answer.—I said it was a very simple cerate.

Question.—What is that?

Answer.—It is the simplest kind of preparation that is made from oil—from lard—elements of lard from a hog largely, may be composed of that, and may contain the slightest tint of camphor—little odor of camphor. I am only giving an opinion; that is all I can say on the subject.

Question.—All you know, in your opinion, is that there is a little camphor in it—mostly lard?

Answer.—Well, no; not mostly lard.

Question.—Mostly camphor?

Answer.—I don't know.

Question.—What is cerate?

Answer.—It is a simple basic ointment used for various things.

Question.—Do you know of your own knowledge what is in cerate?

Answer.—No.

Question.—Most cerates are then ointments?

Answer.—Yes, sir.

Question.—Who was the manufacturer of this that you used?

Answer.—I think it was manufactured by a man by the name of Weaver.

[Much of Carson's advertising is run in the form of reading matter, being set in the same style of type and having the same general appearance as ordinary news items. The Kansas City *Journal* has long shared the illicit profits of quackery with "Dr." Carson who used that paper extensively to aid him in angling for his dupes. The following is interesting:]

Mr. Reed.—Doctor, did you have any written contract with the *Journal* with regard to you advertising with them, or was it oral?

Answer.—I have no memory of ever having had any written contract with the *Journal* for advertising. I am not able to answer that question directly. I can only say that I paid the *Journal* when they presented their bills to me to pay them.

Question.—Did you make any agreement, or did you during the month, including November 8, have any agreement with them as to the publication of matter for you?

Answer.—I have an agreement with them for publication of matter at any time.

Question.—How much do they charge you?

Answer.—They usually charge me for double ads—charge me ten cents a line—for matter they publish as reading matter they charge fifty cents a line; that is, on inside pages.

Question.—On outside pages what do they charge you?

Answer.—Until last year they charged less—a dollar and a half on the first page.

Question.—And what does the *World* charge you?

Answer.—The *World* charges me seven cents a line, I think, for display or reading. On reading matter I think they charge me inside twenty-five cents for reading matter, what they call reading matter; even common matter repeated they call reading matter.

CARSON'S ALMA MATER—THE AMERICAN HEALTH COLLEGE

[Carson claims his right to the title "Doctor" on the ground that he is a graduate of the American Health College of Cincinnati, O. In his recent letter to THE JOURNAL, he says that "the standing of the school and its right to issue diplomas" have been established. An investigation of this institution was made by the Ohio State Board of Medical Registration and Examination, several years ago. Some of the testimony taken at that investigation makes very clear the utter worthlessness of the American Health College and shows the ignorance of those conducting it. Briefly stated, the American Health College was founded and run by the picturesque old quack, John Bunyan Campbell. Campbell was the whole college and taught the "great Vitapathic system," which he originated and copyrighted! The Ohio State Board made their investigation in 1896. Campbell organized his college in 1874. It had, therefore, been in existence over twenty years at the time of the investigation. Here is what the Ohio State Board elicited from Campbell under oath:]

JOHN BUNYAN CAMPBELL'S TESTIMONY

Question.—Let me ask you one or two questions about your school, and then you can develop your system. How many teachers have you in your school?

Answer.—Well, I have be[illegible] such di principal teacher myself, but as
I say, I am—
Question.—You fill the [illegible] chairs yourself?
Answer.—As I say, I [illegible] it is not [illegible]g others to take my place, as I
a full school, of course, but I
am getting old. Then [illegible]e, but simply place—rather I had to revive it.
had to start this system[illegible] [illegible]urers there?
Question.—Have you [illegible] importa[illegible]
Answer.—No, sir[illegible] for license
Question.—Just y[illegible]self [illegible]
Answer.—Yes, sir [illegible] with this school?
Question.—How lo[illegible]T, M.D., Chairma[illegible] in the first place, in 1874.
Answer.—Well, th[illegible]
Question.—Where [illegible] 25th and E Sts.,[illegible]ncinnati.]
Answer.—Fairmount[illegible]

Question.—Have you been issuing certain announcements or circulars?

Answer.—Certainly.

* * *

Question.—Have you been graduating, or do you now graduate students and give them the degree of Doctor of Medicine?

Answer.—No, sir; we are not a medical school at all.

Question.—Not a medical school?

Answer.—No, sir; not at all. You need not examine us any further if you don't want to. We are not a medical school at all. We don't use "M.D."

Question.—Do you issue any certificate or diploma?

Answer.—Certainly we do—our school.

* * *

Question.—You say that you don't conduct a medical school?

Answer.—No, sir.

Question.—Did you publish this paper?

Answer.—Yes, sir.

Question.—If you do not run a medical school, what does this signify: "Closing exercises of the American Health College and Religio-Scientific Medical Institute of the Vitapathic System of Practice"?

Answer.—Yes, sir; "religio-medico"—that is the way we are chartered.

Question.—Do you undertake bringing about cure of disease?

Answer.—No, we don't do that, either.

Question.—In what sense are you a medical college?

Answer.—Not a medical college in any sense—only use remedies.

Question.—Or what do you use instruments for?

Answer.—Simply use electric batteries, that is all; we have a patent bath in the United States for which we have got patent rights.

* * *

Question.—Isn't it the truth that you undertake to treat poisons?

Answer.—We undertake to pull out poisons; that is all we do.

Question.—And treat cancers?

Answer.—We pull out poison and then they get well.

Question.—And snake and rabid bites?

Answer.—Yes, sir; we have the electric treatment process by which we can pull out poisons from a snake bite, mad-dog bite.

Question.—Isn't it the truth that you treat fevers, cholera and mental and nervous complaints?

Answer.—We are now not treating acute disease.

Question.—You practice in obstetrics, don't you?

Answer.—Not as a general thing. We teach our students very thoroughly about obstetrics because they may be taken in a hurry.

Question.—And all diseases of women?

Answer.—All diseases of women. They may be taken in a hurry.

Question.—You hold yourself out in this circular addressed "To all Physicians throughout the World" as teaching these various subjects?

Answer.—Yes; various subjects there on the card. We are not attempting to cure any disease. Our statement there is that poisons is the main cause of disease.

Question.—How do you treat and manage the poisons, Dr. Campbell?

Answer.—Well, I will tell you a very good way. Supposing you had taken some calomel and it was in you.

Question.—Now, how do you teach the poisons and the nature of them?

Answer.—Well, we teach them. Let me state and I will tell you. Now, supposing you had taken calomel or some other poison. I don't care if it is vegetable poison. You are full of it, sick and sufferer. I will draw that out at your feet and show you on a copper plate, and you can go to the chemist and show him; that is the way I prove it.

[The laboratory, clinical and teaching facilities of the "school" from which "Dr." Carson "graduated" are described by Campbell—who, it will be remembered, was the entire college—as follows:]

Question.—You don't have a laboratory?

Answer.—No, sir.

Question.—Do you teach histology?

Answer.—Oh, we teach it.

Question.—Do you mean that you have a histological laboratory?

Answer.—No, not particularly.

Question.—You have no laboratory of that kind whatever; nor pathological?

Answer.—Not to any extent.

Question.—How often do you have clinics at your college?

Answer.—Regularly once a week.

Question.—What clinics do you hold or conduct?

Answer.—Well, persons come in for free clinics, of course.

Question.—Yes, generally—

Answer.—And we take them just as they come, of course.

Question.—Do they come very often?

Answer.—Well, we have a number of them; yes.

Question.—Do you do any work in dissection?

Answer.—No; no dissection.

Question.—You have no connection with any anatomical society?

Answer.—No, sir; no society but our own.

Question.—Any instructions in anatomy and physiology in your school?

Answer.—Yes, sir.

Question.—Who gives them?

Answer.—I do myself, sometimes, and the Professor of Hygiene, Dr. Kalb.

Question.—How long since Dr. Kalb has been connected with your institution?

Answer.—Well, he testified, I believe, here he graduated in 1892; no, it was before that he graduated; I think in 1879.

Question.—How long since he has been connected with your institution?

Answer.—Well, he is now not connected with it.

Question.—How long ago did his connection cease?

Answer.—Well, he testified here, I think, in 1863. He was on the stand here and he testified.

Question.—You mean 1893?

Answer.—Eighteen ninety-three.

Question.—Who within the last two years has been filling his place?

Answer.—I have done it myself.

Question.—You have done that?

Answer.—Yes, sir.

Question.—Now, have you had any instructors in obstetrics?

Answer.—Yes, sir.

Question.—Who has given that?

Answer.—I have given it myself.

Question.—Have you had any instructors in the diseases of women and children?

Answer.—Yes, sir.

Question.—Who gives that instruction?

Answer.—I do; I am teaching the whole system myself. But I haven't got up to the point yet, if you will let me talk.

Question.—Just a minute, doctor. We will just ask you a few questions and then you can go on. Who teaches—or did you have any instructors in surgery?

Answer.—None. We don't practice surgery at all. If there is a surgical case, we turn that over to a surgical doctor.

Question.—Do you teach any materia medica?

Answer.—Not medicine; no.

Question.—Are you opposed to the use of medicines?

Answer.—Yes.

Question.—Opposed to the use of all drugs and medicines whatsoever?

Answer.—Opposed to the use of all drugs and medicines whatsoever.

Question.—And you substitute for them baths and water and electricity?

Answer.—No, we don't substitute nothing.

Question.—You use in place of them, then?

Answer.—No, sir; we don't use in place of them. We ain't on that basis. We pull out the poison as I have showed you, and the person gets well himself.

Question.—You pull that out by means of electricity?

Answer.—Yes, sir; our own engine. We have a specially invented engine for this purpose, and have a patent vapor bath that brings it through of the skin.

Question.—As I understand it, you have no instructors in your college except your own?

Answer.—That is all.

Question.—You treat all the branches that may be taught?

Answer.—Yes, sir.

[It is interesting to learn that "Dr." Carson—if his alma mater (or should it be "almus pater") is to be believed—obtained his diploma and all the "trimmings" for a mere paltry $150. Campbell testified:]

Question.—What tuition is required to enter your school?

Answer.—Well, we have a circular that tells it all. We sell our copyrighted system, our books, vitapathic library, our electrical apparatus, our own invented engine we have for extracting these poisons, our patent electrovapor baths and put it all in to the student at one hundred and fifty dollars. That is the price on the proclamation, and that is the maximum. The minimum is away down; less than half of that. Our object is to do good regardless of any money.

[Campbell's practice, at the time that he was conducting his diploma mill, was described by him as follows:]

Question.—Within the last few years of your practice of vitapathy, what class of cases have you treated?

Answer.—Well, mostly been pulling out poisons *on our copper* plate. We ain't curing disease at all; the person may not have any disease. He is simply full of poison, don't you see?

Question.—What do you consider poisons, doctor?

Answer.—Well, calomel is poison; strychnin is poison; iron is poison.

Question.—Would you consider disease germs poison in the same case?

Answer.—Well, I have a different idea about germs *from* most everybody else.

Question.—How would you destroy disease germs in the patient?

Answer.—My idea is the germ is not the cause of the disease at all, but the disease is the cause *of the germs.* You will never get any germs in anybody until there is separation or decomposition there, something. Put that down, you old doctors, as a fact, that germs don't make disease!

Question.—What would cause the disease, doctor?

Answer.—They didn't have the disease; they simply had the poison, and I pulled it out.

Question.—You say the disease was the cause of the germ?

Answer.—Yes, sir.

Question.—What produces the disease?

Answer.—Well, persons are liable off-hand to disease the world over, of course.

[The "vitapathic treatment" of small-pox was described by John Bunyan Campbell thus:]

Question.—What do your people do in case of small-pox?

Answer.—We don't use drugs, sure. Oh, no. No. Small-pox is a poison trying to get out as best it can in pustules. We simply take our patent bath and let it out and the man walks off well. We don't give poison as you fellows do.

[And the "Vitapathic Treatment" of some other conditions:]

Question.—Have you ever treated a case of rabies?

Answer.—Yes, sir.

Question.—You did?

Answer.—Yes, sir.

Question.—Did you ever have a case that was absolutely in the spasms?

Answer.—Yes, sir; had spasms.

Question.—And you cured the rabies?

Answer.—Yes, sir. Yes, sir; had spasms.

Question.—Ever treat lockjaw?

Answer.—Yes, a number of cases. That's blood poison, too.

Question.—Never had a case die?

Answer.—Never had a case die.

Question.—From lockjaw?

Answer.—No, sir.

Question.—Is that a fact?

Answer.—That is a fact.

Question.—How many cases have you treated?

Answer.—Well, at least twenty in my life.

Question.—You are sure they were real cases of lockjaw?

Answer.—Sure. Certain cases of lockjaw.

Question.—How did they get to your house?

Answer.—Didn't get there at all.

Question.—You went to them?

Answer.—Yes; the surgeons that had them in charge sent for me, and I pulled out the poison.

Question.—And you never lost a case?

Answer.—I never lost a case; no, sir.

Question.—Do you treat cancer?

Answer.—Yes, sir.

Question.—Did you ever cure a cancer?

Answer.—Yes, sir. I pulled out the poison and the *parties* would get well.

Question.—Supposing the cancer were very extensive, then what?

Answer.—I don't care how extensive it is. We remove the poison and they are certain to get well. Nature does the rest.

Question.—Can you name a doctor here who has ever sent you a real cancer in an advanced stage?

Answer.—No, sir.

Question.—Is there any doctor here who knows of a case you have cured?

Answer.—I don't know whether they do or not.

[As to the reputation of the American Health College of Cincinnati, the following portions of testimony given by a Cincinnati attorney—Mr. E. P. Dustin—before the Ohio State Board at the time of its investigation will be enlightening:]

ATTORNEY DUSTIN'S TESTIMONY

Question.—You are an attorney in this city and have been for some years?

Answer.—Twenty-five years; yes, sir.

Question.—Are you acquainted with the gentleman who just left the stand—Dr. Campbell?

Answer.—I am.

Question.—Are you familiar with his institution out in Fairmount?

Answer.—Somewhat.

Question.—Just state to the court what you know about this college, will you?

Answer.—Well, I know that it has had the reputation of being a fraudulent medical concern for years.

* * *

Question.—Do you know anything further about the institution?

Answer.—Nothing, except the general reputation. It has been bad for years. It has been a fraudulent concern for years.

Question.—Do you know whether or not any of the persons claimed to have graduated from that institution have practiced medicine?

Answer.—Yes, sir. Young Campbell practiced and claimed to have the right to practice under the diploma attached to that record.

Question.—In that case did other cases develop?

Answer.—There were other witnesses; persons who had a knowledge of the fraudulency of this so-called medical institution.

Question.—Were there other instances of persons practicing medicine under those diplomas?

Answer.—I am not positive that there were, but I know personally of several who have pretended *to* be graduates of this college, very ordinary looking and appearing and dressed people, who have pretended to be able to practice from these diplomas.

[As has been shown the "vitapathic system" consists essentially, in standing the patient on a copper plate, making some mesmeric passes with the hands and thus "drawing the poison out." Dr. J. W. Prendergast, a reputable physician of Cincinnati, was at the time of the investigation of Campbell's quackery, requested by the State Board to visit the American Health College and report his findings. Here they are:]

DR. PRENDERGAST'S TESTIMONY

Question.—State whether you visited this school of Dr. Campbell's at the request of the board and what you found.

Answer.—On May 26, accompanied by Dr. Haerr, at the request of the State Board, I visited the "vitapathic school" at Fairmount, and was received very cordially by Dr. Campbell, who told us just what he has told you gentlemen here on the stand. I don't know anything that I can add, other than that in the doctor's little office in one window was a pane of *red glass* and a pane of blue glass. I was curious to know what that was for, and the doctor explained it by saying they would vitalize the remedy they were to give the patient, or sometimes food, depending entirely on the nature of the disease; it would be placed beneath the red glass or blue glass. The doctor took us in the little lecture room and pointed out some of his charts, and showed me a copper plate he had some patient standing on, and there was a deposit on the plate that the doctor said was strychnin or calomel. I have been very much discouraged, however, since my visit there, at the school of medicine I have been practicing in. The doctor has a much more simple process of curing disease. As he says, he simply pulls it out!

Question.—Was there any other equipment for a medical college?

Answer.—No, sir.

It surely is not necessary to quote more to show the utter worthlessness and downright fraudulency of the American Health College of Cincinnati. So far as we know C. H. Carson bases his claim to the right to treat disease on the diploma that he received from this notorious parchment factory. A faker graduated by a faker; a quack instructed in quackery. Such is Carson, who for years past has deceived the sick, humbugged the suffering and capitalized the credulity of ignorance.

Miscellany

The Receding Birth-Rate.—Germany and France have happily settled their differences in regard to Morocco; but the German chancellor is charged in his own country with yielding not to France, but to Great Britain. France, which a hundred years ago lorded it over the Germanic nations and forty years ago believed that its military forces were superior to those of the German empire, has now almost lost its place among the great nations of Europe. Paris is nearly the same city it was forty years ago; Berlin is a new city. This alteration in the position of France is due to its stationary population. At the end of the last century the population of France formed one-quarter of that of the civilized powers of the world, while at present it has fallen to 7 per cent. This state of affairs is causing much anxiety in France; it is discussed in detail in a recent book by Dr. Jacques Bertillon, chief of statistics for the city of Paris. The data which he reviews in detail deserve much consideration not so much because, as he claims, they are peculiar to France, but rather because France has been first to exhibit a state of affairs likely soon to be evident everywhere. It is almost incredible that there should be departments in which there are three deaths for every two births. In Lot the population has in the course of twenty years decreased from 271,514 to 216,611. Every nation except France is increasing in population; but the birth-rate is decreasing everywhere. Statistics can be misapplied to almost any purpose. Thus since 1876 the birth-rate for France has decreased from 25 to 21 per 1,000, whereas for England it has decreased from 36 to 27, and it might be alleged that, should the same decrease continue, the birth-rate after an equal period would be about the same for France and England, and about a hundred years thereafter would be 5 in France and less than nothing in England. This is obviously absurd, but it is by no means unlikely that the birth-rate will fall below the death-rate in all civilized nations and later in other nations as they are brought within the circle of European civilization. The increase in population during recent years has been due to the decreased death-rate. This has resulted directly from the application of science to medicine and hygiene and indirectly from the improved conditions of living which science has made possible. In all civilized countries the birth-rate is now smaller than the death-rate was formerly. But the death-rate cannot decrease indefinitely; it has indeed possibly reached in Great Britain a lower level than can be maintained. A death-rate of 16 per 1,000 in a stationary population means that the average length of life is over 60 years and as one-fourth of those who die are under 5 years of age the average age at death of those surviving infancy would be about 80 years. Odd as it may appear at first sight, the decreased death-rate of a country such as Great Britain is largely due to a decreasing birth-rate combined with an increasing population. Such conditions give a population in which there are fewer children under 5 and fewer old people over 60, in which groups the death-rate is about 60 per 1,000, whereas between the ages of 5 and 35 it is below 5. In France there are fewer children than have ever existed in any population, which reduces the death-rate; but there are more old people—twice as many as in Great Britain—which increases it. The proportion of old people will further increase in France, and will be tripled in Great Britain. It should also be remembered that the death-rate of those over 45 has increased continually, owing mainly to the keeping alive of weakly people at earlier ages. It seems unlikely that the death-rate will ever be considerably smaller than it now is in England, whereas the conditions which have lowered the birth-rate seem destined *not only* to continue but to increase. The physiologic limitations will doubtless increase as children grow up who could not be born naturally or be nursed naturally or live through the harsher conditions that formerly obtained. The economic and social causes—the increase and wider diffusion of wealth, prudence and knowledge—will almost surely become more potent.—*Popular Science Monthly.*

Correspondence

Priority in the Use of Bismuth-X-Ray Method of Locating Stomach, Etc.

To the Editor:—Dr. Walter B. Metcalf (The Journal, Nov. 4, 1911, p. 1555) bases a claim to priority in the use of this method on a report in the *Philadelphia Medical Journal,* Aug. 26, 1899. During the winter of 1896-97, I was at work on this general problem, using first tablets of reduced iron in capsule (worth trying occasionally with the fluoroscope) which were easily demonstrated by fluoroscope in the mouth but, with the instrument at first used, not in the stomach. In the spring of 1897, radiography was tried before an audience in the Dental Department building, University of Buffalo, but was not successful. Later experiments revealed the tablets moved by peristalsis so that a radiogram was obviously impossible with an active stomach. After some further preliminary work, perfectly satisfactory fluoroscopic results were obtained, about July 1, 1897, in about a dozen cases by using suspension of bismuth, checked by auscultatory percussion, etc. This was published in *Medicine,* Chicago, in February, 1898. Boas and Dorn reported the same method, independently, during the same month, in a German journal. Roux is said to have succeeded late in 1896, a few months earlier.

I want to urge that fluoroscopy, using a lead-lined apron, a metal cover over the fluoroscope handle and an *x*-ray tube inclosed in a box and protected with paint or sheet-lead, is reasonably safe and, if a good clear screen of sufficient size is used, of great value, especially with regard to gastric movements. A radiogram, being instantaneous, may be literally correct, but it gives the same distorted conception as many instantaneous photographs. I watched the work of Dr. A. Beclere, of St. Anthony's Hospital, Paris, in 1908; he uses the screen very largely and obtains beautiful results, even pulmonary lesions being visible.

A. L. Benedict, Buffalo, N. Y.

"Ozonized Testimonials"—A Reply

To the Editor:—My attention was called this morning to the interesting article "Ozonized Testimonials" on pages 1629 and 1630 of The Journal for Nov. 11, 1911. The remarks made therein are to a certain extent correct, but your deductions are wrong. As a matter of fact, the whole idea conveyed by the article was erroneous; no attempt is being made to secure testimonials for any manufacturer.

I presume that the interests of the readers of The Journal will be conserved by publishing the following corrections which seem to be necessary. In the second paragraph you write: "Incidentally, the advertising pages of this non-medicinal publication are devoted *largely* to medicinal products!" I have taken the trouble to go through the advertising pages of the last number of the journal referred to, and find that altogether there is a total of 31½ pages of advertising. Of these, 9¾ pages are devoted exclusively to apparatus for the administration of the various physiologic measures; 4⅝ pages are devoted to biologic products such as bacterial vaccines, tuberculin, etc., 13⅝ are miscellaneous, including books, corsets, supporters, laboratory service, etc., and *only* 3½ pages are devoted to drugs. This means that of 31½ pages, 3½ pages, or approximately 11 per cent., constitute the pages which are devoted "largely" to medicinal products.

Further, you seem to condemn the fact that both of my journals carry advertisements—"large ones" as you say—of the device known as the Oxyoline apparatus. The "large" advertisement consists of a single page in one of my journals and half a page in the other. The insinuation, which is very evident, is entirely wrong; and your sources of information seem to be quite as faulty as your editorial expression.

In regard to your reference to the hinted infringement of the postal regulations regarding *bona-fide* subscribers to my journal, I would say that I have it direct from the postal authorities, that it is not improper to present collaborators or writers with subscriptions in remuneration for their services. Others do this, as I have frequently received medical journals in return for articles which I have written for them. Incidentally, "those who live in glass houses shouldn't throw stones." How large a proportion of those receiving THE JOURNAL subscribe for it personally?

In the last paragraph you write: "And yet this exhibition of venality only affected the public's pocket-book; it in no way jeopardized its health." I presume this last sentence is an insinuation that my belief in the use of ozone in medicine, or the advocacy of such a procedure, tends to jeopardize the health of the public. If this is so, it will be very interesting to know just how. On the other hand, if I am to depend on personal experiences and those of a large number of friends, the use of ozone is of decided therapeutic value, and the editorial published in THE JOURNAL, Oct. 21, 1911, page 1370, not only evidenced a paucity of information on your part, but was of a similar nature to a number of other things which have been published in THE JOURNAL.

To judge from the past experience of others, this letter will not be published in THE JOURNAL, although as a member of the Association, I respectfully request that this matter be given equal consideration with the other side.

HENRY R. HARROWER, M.D., Chicago.

COMMENT: We refer our readers to the article dealt with in this letter. Further comment is unnecessary.—ED.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE NAME SPIROCHÆTA PREFERRED TO TREPONEMA

To the Editor:—I wish to call attention to an error in nomenclature in the editorial on "The Cultivation of the *Spirochæta Pallida*" (THE JOURNAL, Nov. 18, 1911, p. 1698).

Throughout the article repeated reference is made to the *Spirochæta pallida* as the organism causing syphilis, whereas the correct name of the organism in question is undoubtedly *Treponema pallidum.*

THE JOURNAL is probably the most widely distributed medical periodical in this country and its influence in the dissemination of an incorrect statement is too great to permit the latter to pass unchallenged. CHARLES A. PFENDER, M.D., Washington, D. C.

ANSWER.—The name *Spirochæta pallida* is not wrong. The nomenclature, as well as the systematic position of the pathogenic spirochetes, is as yet anything but definitely settled. There is considerable difference of opinion among investigators as to whether this important group of organisms should be classed with the protozoa, or with the bacteria, or placed in a separate, intermediate group. The tendency, if any, is to remove these organisms from the group of protozoa where they were placed by Schaudinn in 1904. Whether they will finally find their place among the spirilla or in an entirely separate group remains to be seen.

As is well known, Ehrenberg, as early as 1832, distinguished between flexible and rigid spirals. To the latter he applied the name *Spirillum;* to the former, *Spirochæta.* In this sense, these names continued in use until after the discovery by Schaudinn of the cause of syphilis (1905). On comparing *Spirochæta pallida* with Ehrenberg's type species, *Sp. plicatilis*, Schaudinn was led to believe that the latter possessed an essentially different structure. He described the *Sp. plicatilis* as being flat, possessing an internal structure, no flagella, but instead a marked undulating membrane. By contrast, the *Sp. pallida* was cylindrical, possessed terminal flagella and no undulating membrane. Hence, Schaudinn accepted the generic name *Spironema*, proposed by Vuillemin, but learning that this name had been applied previously to another organism he substituted a new one—*Treponema;* wherefore the designation—*Treponema pallidum.*

Assuming that there is a real generic difference between the two organisms, *Sp. plicatilis* and *Sp. pallida*, it follows that the first described species, the *plicatilis*, retains the original generic designation of *Spirochæta*, while the *pallida* acquires a new name. With such an assumption, and excluding possible affinities to the spirilla proper, one could easily and rightly assert that the correct name for the syphilis organism is *Treponema pallidum.*

It is worthy of note, however, that our knowledge of the structure and development of the various spirochetes cannot be considered complete, much less final. Only recently, the existence of the "splendid undulating membrane" which Schaudinn ascribed to *Sp. plicatilis* has been denied by competent workers. There still remains the internal structure, which in this large organism is apparently quite different from that in the minute pathogenic spirochetes, and this evidence, more than any other, is the basis of the recent classifications proposed by Gross and Dobell.

In the classification of Dobell (1911) all of the parasitic spirochetes (other than of molluscs) are placed in the genus *Treponema*, although some of these forms were specifically stated by Schaudinn to possess an undulating membrane and no flagella. Dobell, in fact, does not believe in the existence of flagella on spirochetes, but fails to indicate the nature of the organs of locomotion. Presumably as an argument against their bacterial nature, he states: "Two most important characters of the bacteria—the formation of endospores and the possession of flagella—are not encountered in the spirochetes." Neither are they present in micrococci and many bacilli.

It is clear that the several classifications proposed have only a provisional value, and hence are subject to change. Such being the case it does not seem to be wise to change from the more common name, *Spirochæta pallida*, with the possibility of having to change back later.

SKIN ERUPTION FOR DIAGNOSIS

To the Editor:—I am anxious to obtain information as to the possible diagnosis and treatment of a skin eruption which appeared in October, four years ago, on the back of the left hand. It was itching from the onset and would have to be scratched; then it would break open and become very tender. This condition would last for a week and then heal up, not appearing for two weeks, only to appear again in a similar manner. This lasted from October to June, when it disappeared, only to appear again in October the next year, and so on until the present time. The place of eruption is as large as a silver dollar and is itching almost all the time.

G. T. BRAY, M.D., Vinson, Okla.

ANSWER.—One cannot make a positive diagnosis of an eruption without seeing it, but from the description there is little doubt that the case is one of eczema of the hand. The difficult thing to determine is whether it is purely of local origin or due to some general intoxication. Many of these cases of eczema occurring on the hands are a manifestation of some auto-intoxication usually arising in the intestinal tract, and treatment must be directed to overcoming this disorder. In the way of local treatment, the first thing to do is to prevent irritation as far as possible, to avoid much washing with soap and water, particularly in cold weather. If the patient is a physician, he should keep the hands out of antiseptics as much as possible and in general protect the hands. There are no local applications which are specific for such cases, but in general bland ointments are useful for their soothing and protective effect. One of the best ointments for such a case is a well-made diachylon ointment containing 10 grains of oil of cade, and ½ dram each of zinc oxid and calamine to the ounce of ointment.

TYPHOID VACCINATION

To the Editor:—1. What degree of heat is needed to destroy the *Bacillus typhosus* in making typhoid vaccines and how long should it be continued? 2. What is the best culture medium for the development of typhoid vaccine? 3. Does the milk of the female suffering from typhoid fever respond to the Widal reaction? Does the milk of a cow or goat treated with typhoid vaccine show the presence of agglutinins, opsonins or any of the elements of Ehrlich's side-chains? L. G. LELAND, Newton Falls, Ohio.

ANSWER.—1 and 2. The typhoid vaccine now being used in the United States Army is prepared as follows, according to Russell (Bull. Johns Hopkins Hosp., 1910, xxi, 83): A typical typhoid strain is grown on agar in uniform tubes for eighteen to twenty hours, washed off in about 2 c.c. of physiologic salt solution for each tube, and carefully heated at 60 C. for one tioned tuberculosis because that is one of the diseases most frequently heard of; but in the average community other conditions are beginning and I may say are well under way, to be handled in the same enlightened manner.

I have mentioned scientific investigation as second in importance. Some of us feel that the people of Massachusetts may fairly be considered up to the average in intelligence. Yet a private hospital, conducted for the public welfare in one of its university towns, tried to start a small laboratory less than twenty years ago and the president of the hospital objected strongly to having such a department within its walls. This president was not an ignorant physician. I have read many of his papers decidedly to my advantage. He had stood well to the front in Massachusetts as one of the leaders, but he gave it out as his dictum that no money should be spent by that corporation in so useless a department, and that if it was insisted on he would resign.

Another hospital in the same state built its laboratory about sixteen years ago, and the chairman of its board of trustees reiterated to me many times that he had no sympathy with spending money for that purpose; that the money raised for the building of this laboratory would have come to the hospital anyway in the course of time for the actual treatment of the patients and doing good to the poor.

It is difficult for us to place ourselves back even this short period and realize the attitude of educated men toward scientific investigation in our hospitals. To-day these hospitals would be laughed at if they were not making honest effort for efficient work in these departments.

The laboratory in each department in many hospitals to-day is many times as large as the laboratory of the whole institution ten years ago, and it is because of this very scientific advancement in the treatment of a case that it becomes necessary not to lose sight of the gentle and sympathetic care of the patient.

There is no longer any fear of not having the support of the community in scientific investigation, provided the interests of the patient are well guarded and the attitude of the staff toward the patient is carefully looked after. We should try to see ourselves as others see us and then make such changes in our attitude and manner as common sense dictates.

I know of a layman who is a trustee of one of the large general hospitals in Massachusetts, who has become convinced that the place for scientific investigation in all medical and surgical matters is in the hospital and not in the medical school; that funds should be solicited for this purpose, and that the scientific work of the hospital should be as heavily endowed as the department for the treatment of patients. He feels that scientific investigation of medical and surgical matters would progress much faster, and in a much more economical manner, if it were divorced from the schools and entirely engrafted on the hospitals themselves. He believes, and supports his belief with plausible argument, which I believe has not been proved unsound, that the medical school should simply be used to teach what the scientific departments of hospitals have proved to be true.

Many a community has a hospital built for it or has money left to it for building a hospital and goes ahead in a blind sort of way to construct an institution which is larger than it needs without making any provision for running it. I recall now two instances of this. A hospital without patients cannot educate; it cannot do good. If some of the money is used to construct smaller and more economical buildings, and the part which is left is used for opening and running the institution for a few years so that the community becomes impressed with its convenience and usefulness, this education and demonstration, so far as my experience goes, always brings philanthropists to the front who are glad to keep its doors open and furnish it with plenty of funds for legitimate expenses.

The rapid advance in the construction of hospitals makes certain that in no very distant time public opinion will demand that each community shall have sufficient beds in its hospitals to care for every sick person who needs to be within their walls.

The medical profession is gradually being much more carefully educated and much better fitted for the care of patients, but proportionately fewer persons are seeking this profession. I believe that this foreshadows, accompanies and makes for the advancement of the hospital, because the gathering of the sick into hospitals, not only places them where they can be better treated and given a better chance of recovery, thereby lowering the death-rate of the community, but it also conserves the energy of the physician and multiplies his usefulness. Thus far, the physicians may be quite sufficient to handle our sick in a progressive manner, provided the multiplication of the hospitals keeps pace with the needs of the community.

The German communities are much farther advanced in this particular than the American. Their insurance laws have brought about the support of sick laborers and servants in these very hospitals that are built by the cities. The hospitals in the suburbs of Berlin and other German municipalities may well stand as models for cities of much larger size in this country. Pennsylvania, perhaps, is the only state in our Union that has overdone this work.

Three years ago I recommended to the National Hospital Association that we should take steps to have an inspector appointed for general hospitals throughout this country. I still believe that the appointment of a state inspector, better, a national inspector, would be one of the best steps for progress that we could make. He might not please us, but he would help to standardize our hospitals to do away with many abuses that now exist.

I wish to repeat, the first duty of a hospital is the care of its patients. Everything that we do and all the policies that we adopt should be looked at from this point of view: Will this make for better care of our patients?

The care of a patient can never be first-class unless the attitude of the physicians in charge and of the superintendents toward the patient is both kind and sympathetic.

The hospital problem will not be solved until we have enough beds to care for every patient who can be benefited by coming to a hospital.

The hospital conserves the medical energy of the physician, at the same time rendering that energy more efficient. The time is not far distant when this phase of the matter is going gradually to drive all sickness in a community within the walls of a hospital.

The success or failure of these meetings will finally be tested by our success in bringing to a higher and higher standard the hospitals of this country.

697 Huntington Avenue.

THE SELECTION OF HOSPITAL EMPLOYEES UNDER CIVIL SERVICE RULES[*]

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INTRODUCTION

The underlying principle of the civil service regulations is that the best shall serve the state. The merit system, as it is called, strives to prevent the hospital superintendent from selecting his personal friends for positions in the hospital service and seeks to prevent him also from appointing those who are merely recommended to him by acquaintances. Under the merit system every citizen has a right to file an application whenever a vacancy occurs in a hospital, and the applicant who fulfils in the most satisfactory manner the requirements of the civil service rules is appointed. In this way the state obtains the service not merely of those who may be or may not be efficient, but also of the best available men and women.

THE COMPETITIVE CLASS

For purposes of administration employees are divided into several classes under the civil service. The most important class is the competitive class. In hospitals this class includes the incumbents of all positions in which substantial salaries are paid. It generally includes all physicians, trained nurses, supervising nurses, chief nurses, trained laboratory assistants, clerks, stenographers and the like. Applicants for positions in the competitive class are required to file a written application for examination. They are then summoned by the civil service commission for a written examination, which usually consists of two parts, one based on technical knowledge and one based on experience. The technical part requires the applicant to submit written answers to technical questions designed to test his possession of the knowledge required for the efficient performance of the duties of the position sought. Physicians are examined in their knowledge of medicine, nurses in their knowledge of nursing and stenographers in their knowledge of stenography and typewriting; their answers are rated on a competitive scale. The experience papers consist of statements prepared by the candidates regarding education and experience. These statements are carefully verified and rated on a competitive scale. Those candidates having the education and past experience best qualifying them, in the opinion of the examiner, for the position sought, receive the highest rating. A properly prepared and properly rated competitive examination in which both technical knowledge and the education and experience of the candidates are rated on a competitive scale undoubtedly results in the selection of the best available men and women for positions for which the hospitals pay a reasonable salary, and for which incumbents are required to have some education and some ability to express themselves in writing.

THE NON-COMPETITIVE CLASS

The hospitals in this country unfortunately pay many of their employees such small salaries that they are unable to secure men and women who are able and willing to take the examination. Competitive examinations presuppose that there are many applicants for the position. If the hospital must search for the employee it cannot expect the applicant to submit to a competitive examination. In cases of this kind there is no competition between employees for the position, but rather between the hospital and other prospective employers for the employee. In these cases the examination of the applicant is non-competitive. He is examined to determine whether or not he is competent to fulfil the duties of the position rather than to determine whether or not he is the most competent man for the position. Included in this non-competitive class are the domestics, orderlies and other minor employees in the hospital service. The non-competitive examination usually consists of an inquiry into the applicant's personal history, which must in each case be verified. In this connection hospitals seek to give employment with compensation to destitute convalescents, and they also endeavor to bar from their service worthless institutional rounders who fail to perform satisfactory service in any institution. This system of non-competitive examinations is a satisfactory means of preventing hospitals from employing, in minor positions, men and women who are obviously unfit for the positions which they seek.

THE LABOR CLASS

Positions, the incumbents of which may be efficient, even though illiterate, are in the labor class. This class is divided into two divisions, the subclass of laborers and the subclass of mechanics. Applicants for both subclasses are required to register and are called for examination in accordance with their priority of registration. Applicants in both subclasses are subjected to a physical examination. Mechanics are, in addition, frequently subjected to a qualifying practical test to determine their fitness to perform duties of their trade. It is presumed in the case of laborers that one man in good physical condition is as good a laborer as any other man in good physical condition, and in the case of mechanics that one competent mechanic is as good as another. There is, then, no competition among applicants in the labor class, laborers being subjected only to an examination of their physical condition and mechanics to a practical examination of their competency in their trade. In the hospital service coal-passers, drivers, elevator-operators, ordinary laborers and mechanics constitute the principal employees of this class. This system of selection is reasonably successful in securing for the hospital satisfactory employees of this kind.

THE EXEMPT CLASS

The exempt class consists of those hospital employees who are not subjected to civil service rules and regulations. This class includes all employees who receive no compensation for their services. Hospital interns and other physicians receiving no compensation are exempt from civil service regulations; but the best hospitals of the country subject all applicants for the position of intern to a rigid written competitive examination of technical knowledge and a careful inspection of personality.

Undergraduate nurses, who receive no compensation, or a nominal compensation, are similarly exempt from civil service regulations. These nurses must possess the preliminary educational qualifications required by statute and are selected by the superintendent of the training-school.

In contagious disease hospitals employees of all kinds are frequently exempt from the civil service rules because of the difficulty of procuring them. The superintendent of the hospital and the superintendent of the training-school are likewise frequently exempt from civil service rule because their administrative duties and responsibilities are so intimately connected with the determination of the administrative policy of the institution that it is deemed best to permit the hospital authorities to select their principal administrative officers without being hampered by civil service rules.

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[*] Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

SUGGESTED IMPROVEMENTS

Personality.—In the selection of hospital employees by competitive written examination, more attention should be paid to the experience of the candidate, without, however, reducing the severity and thoroughness of the technical examination. Although personality is an important element of the hospital employee's fitness, it cannot properly be made a part of the competitive civil service examination, because the introduction of this element into the examination would tend to introduce an element susceptible of grave abuse. The desired purpose can better be secured by the careful investigation of the experience of each applicant and by derating, and if necessary rejecting, those applicants who have an unsuccessful or an unsatisfactory past record, due in whole or in part to their personality.

Salaries.—If the personnel of our hospitals is to be improved better salaries must be paid to the non-professional men and women serving in them. If poor pay is coupled with undesirable service, it is certain that a satisfactory class of employees will not be obtained. The usual reply to this plea for higher salaries is that, since the hospital furnishes maintenance to its nonprofessional employees, these employees have little opportunity to spend their salaries, and would spend a larger salary, as many of them spend their present smaller salary, principally for purposes which would tend to decrease their efficiency. Although this argument fails to recognize the fact that larger salaries would be likely to attract a better class of men and women, it contains sufficient basis of truth to make us give consideration to the bonus plan, by means of which the employees receive the payment of an appreciable sum of money at the end of their term of service, rather than an increase of salary during their period of service. The payment of a bonus tends to serve as an inducement to permanency of service, and also serves to render less frequent the lapses from a proper mode of life now so frequently attendant on pay-day in public hospitals. The male orderlies are particularly unsatisfactory in this respect. It is believed that, if our hospitals would endeavor to select for the position of orderly men who have been trained by enlistment in the Hospital Corps of the United States Army, they would obtain orderlies who not only possess considerable skill, but who are also men of greater sobriety and readiness and willingness to obey the commands of their superior officers.

Mechanics.—In the labor class trade examinations should be more largely introduced as a test of fitness. The complex conditions of modern hospital administration render it more and more unlikely that all men in good physical condition are equally competent and fit to perform the mechanical work of the institution. Simple tests of mechanical skill in the case of almost every employee of the labor class would undoubtedly result in the selection of more competent employees of this class.

Nurses.—Under the present system undergraduate nurses are not subjected to civil service examinations at all, because it is presumed that the statutory regulations regarding the educational qualifications and the ability of a competent superintendent of a training-school will accomplish better results than the impersonal machinery of the civil service law. When the superintendent is a thoroughly competent administrative officer this system works reasonably well. As a layman, however, I venture the suggestion that the hospitals are not performing their full duty to the community when they train only the highly skilled nurses who are graduated at the present day. Nurses possessing the preliminary educational qualifications demanded by our statutes and the technical qualifications required of them before graduation from the training-school generally demand a fee for their services which the poor man is unable to pay, and which it is a hardship for the man of the middle class to pay. The hospitals should train two classes of attendants for the care of the sick: trained nurses, possessing all the qualifications possessed by trained nurses of the present day, and trained attendants, who lack some of the preliminary educational qualifications and some of the higher technical skill of the trained nurse. In this way they could furnish attendants who have been trained in a hospital and who could do much to improve the condition of those members of the community who, when sick, are unable to command the services of a trained nurse. During their course of training in the hospital, these attendants will be able to assist the trained nurses; and, after their graduation, they will be able to extend the benefit of trained attendance on the sick to those who are wholly unable, or unable without serious hardship, to employ and pay the regular trained nurse.

ABSTRACT OF DISCUSSION

Dr. Moses Collins, Denver: In many hospitals suitable and sufficient accommodations are not made for this middle class of our community, which is the largest class and which is the best class in every particular. These people most frequently say they are paupers or they cannot get accommodations. If hospital treatment is the proper thing, and we all believe that it is, some radical steps ought to be taken to meet the demands of people who require our services and need the hospitals and whose ability to pay ought to be met in accordance with their means. There must be some provision made for nurses and they must be the best. I do not agree that we should turn out half-educated nurses to take care of the best class of people in the community and that we should give the paupers the best we have.

Dr. Joseph B. Howland, Boston: Dr. Fuld mentioned the possibility of the bonus system. That never appealed to me. As an example of how it does not work, we recently had a strike of telephone operators in Boston, involving several thousand operators. The company fought the best they could, but as they had to give in, one of the things they suggested giving the operators was a bonus at the end of the year. I am glad to say that the operators rejected the offer. I think any attempt of employers to hold their employees over a period by offering a reward at the end of that time is wrong. I think the pay should be on the basis of what a man earns as he goes along. We all like to keep employees a year, two years and five years if we can, but I think that the bonus is not going to go far in solving our problem.

Dr. Moses Collins, Denver: I tried that method myself once in trying to hold interns and similar employees by agreeing to pay a lump sum at the end of a certain term of service. It did not prove satisfactory at all, and after talking with them and asking what they preferred, they said that they wanted their money every month and I have had no trouble since.

Dr. John N. E. Brown, Detroit: Those of us who have had to deal with hospital employees know the great difficulty, first of all, of securing the right sort; secondly, of obtaining an efficient amount of work from them, and thirdly, of keeping them in our employment. It appears to me that we would do well if we could induce our boards to agree to have some place or make some provision for those employees when they leave the service of the hospital. I think, too, that provisions should be made for the employment of married people in certain of the departments. That would tend toward steadiness and keep employees in the service. Besides, they should be well paid, well housed and well fed. It would be much better if we could have buildings especially for them in which we would not need to put more than one, or at most two, in a room. If we would seek to pay our employees well, make good provision for them while we have them and, at the end of their term of service, if possible, have a farm or some place where we could send them and maintain them for the rest of their days or give them an annuity it would tend to give the hospitals and the community at large a much better service.

Dr. John A. Hornsby, Chicago: Some years ago the other large hospitals of Chicago complained to my board of directors that I was disorganizing conditions of employment for other hospitals because I was paying from three to five dollars a month more for wages than they were. My excuse was that I wanted the best and I could afford none other than the best and that in order to get them I would have to pay for them. I did that, but I did not seem to get any of the best of it and after a while I concluded that something else was wrong. So about that time we moved our nurses into a new home and concluded to fix up a building for the female help. I have never been able to do anything with employees except to pay them wages, and never have had the same wages in the same hospital for the same class of employment at any time. We have in our hospital now orderlies who are getting twenty-five dollars a month, and men who are doing precisely the same service who are getting fifty dollars a month. They are living in the house and under exactly the same conditions of employment, but in the one case a fifty dollar man has been there for years, knows the technic of the institution, and has proved honest and will do four times the work of the other man and do it four times better. I have never had any trouble satisfying the twenty-five dollar man that it was a fair deal and that he could get his fifty dollars too whenever he earned it. It seems to me that only by that sort of competition can we get hospital help. I have not had good luck with orderlies from the United States Army.

Miss Harriet S. Hartry, Minneapolis: We thought of a plan some four or five years ago of increasing the wage of an employee if he stayed one year; also giving that employee two weeks' vacation under pay. We have a houseman who has been with us two years, and this year we increased his salary five dollars and he remarked that he would never go away. We have a home for female employees outside of the hospital grounds.

Dr. H. B. Howard, Boston: The civil service rule presupposes that there are a great many people who wish the positions; that is, that there is a waiting list. As a matter of fact, if you have civil service examinations when there is not a long waiting list, it will hamper you terribly in filling your positions.

A Thought for the Aged.—A cheering thought as we advance in life is that many illustrious examples show the possibility of conserving the intellectual and moral character to a great age. Isaac D'Israeli said that there has been no old age for many men of genius. Titian and Michael Angelo among artists, Voltaire and Littré, Goethe and von Ranke among literary men, Palmerston, Thiers, Beaconsfield and Gladstone among statesmen, Wilks and Paget in the medical profession, testify to this, and there is reason to believe that not only is advanced age consistent with mental activity of a high order, but that such mental activity tends to the preservation of the body and makes for happiness as well as for longevity. The advice of Cicero is sound, that "old men of all things should especially be careful not to languish out their days in unprofitable idleness"—Saundby: Old Age.

FACTORS INFLUENCING HOSPITAL COSTS*

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The question which I am asked to discuss is this: "Why is it that, while hospitals are slowly but surely establishing certain standards of excellence and are attaching to these standards certain specific uses and pretty well-defined prices as to cost, and in this way are approaching uniformity in the cost of institutional maintenance, there is such a wide difference in the per diem cost as there is at present—one dollar per day in some hospitals and three dollars and more in others."

Before proceeding to discuss this question I think that we should have a clear understanding as to what the average cost per patient per day actually means, as printed in the annual reports of the hospitals. It is not computed after the methods which factories employ in ascertaining the cost of their products. The great difference between factory costs and hospital costs is that hospitals make no charge for investments in buildings and grounds or for depreciation of plant.

As the per capita costs published by hospitals represent merely the operating costs and do not take into consideration investment in grounds, buildings and equipment, or depreciation, it is apparent that, while these figures may be of use for comparative purposes, they do not represent the actual costs. If the omitted items were included it would be shown that the actual daily average cost is from 50 to 75 per cent. greater than the published one. The hospital which has a published cost of $2.60 per day would be found to have an actual cost of $4.50 a day. In other words, the average cost per patient per day as computed by hospitals is in reality only about 60 per cent. of the true cost.

The hospitals which I am asked to discuss, one with an operating cost of one dollar a day and the other of three dollars, represent the two extremes. The one dollar a day hospital represents the so-called city hospitals operated generally in connection with almshouses and restricted by parsimonious city governments to small annual appropriations. It goes without saying that in most of these hospitals the features characteristic of almshouses are likely to prevail. The hospital with the average cost of three dollars a day or more, represents a very restricted class of wealthy hospitals in which the practicing of economy is not so essential as it is with the average run of American hospitals. These two classes of hospitals are in no wise comparable and not being representative they may be omitted from this discussion.

Taking representative hospitals, we shall find that the hospitals operated by cities and also a fairly large percentage of those privately operated have costs per patient per day of from $1.25 to $2.00, while other hospitals, also mostly private ones, will have costs of from $2.00 to $2.75 a day. These are the two typical classes of hospitals. Both are well managed; both are doing good work, and to the superficial observer there is no apparent reason why it should require $2.50 a day to care for a patient in one and only $1.50 a day in the other.

Anyone visiting these institutions will be struck with the similarity of the buildings and equipment. Their furnishings are almost identical. There are the same white iron beds, the same nickel-plated sterilizers, the same instrument cabinets, the same operating-tables, the same wheel stretchers and about the same kitchen, engine and laundry equipment. In other words, hospital equipment is pretty well standardized.

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

The initial cost of equipment is probably somewhat greater in the $2.50 a day hospital, but as equipment does not have to be renewed annually it does not figure appreciably in the operating cost.

What, then, are the factors which do influence the average cost per patient per day? I should enumerate them as follows: location of the institution, amount of scientific work done, number of employees and salaries paid, medical school connection, proportion of private room patients to ward patients, service rendered, including food, attendance, etc.

LOCATION

In think it will be conceded that the environment of an institution will to a considerable extent determine its expenses. The hospital located in a large city where standards are high will cost more to maintain than one in a small city, just as it costs the average family more to live in the big cities than it costs in the small cities or the country.

Life in great cities is complex. All sorts of complications tend to increase the costs. These affect the hospitals.

The standards maintained by the leading hospitals of a city determine to a large extent the standards of their sister institutions. The former set the pace. The others cannot afford to lag too far behind. The weaker ones must progress if they wish to maintain their reputations, and they must maintain their reputations in order to obtain support.

These things affect the municipal as well as the private hospitals. I think it will be found that municipal hospitals in large cities are likely to have a much higher per capita cost than do municipal hospitals in small cities. In fact, their cost is frequently higher than that of privately operated hospitals in small cities.

The per diem cost in Bellevue and its allied hospitals, Fordham, Harlem and Gouverneur, vary from $1.70 to $2.30 per patient per day.

Hospitals located in the South, other things being equal, should have lower costs than those located in the North. Ordinarily food and labor are cheaper in their locality and their expenditures for coal are much less. It costs the Winnipeg General Hospital, for example, over twenty-eight cents per patient per day for coal while the Charity Hospital of New Orleans spends less than three cents per patient per day for this item.

EMPLOYEES AND SALARIES

I think it will be found that the pay-rolls of hospitals are the most influential factor in determining the average cost per patient per day. The hospital with a small average cost will be found to be operating with few employees and perhaps paying them small wages. The hospital with the high per capita cost will be found to have a larger number of employees and to pay better wages.

In the institution with the low per capita cost the proportion of employees to patients is about two employees to three patients, whereas, in the institution with the large cost the proportion will be about three employees to two patients.

I know of institutions with 250 beds with pay-rolls of from $3,500 to $4,000 a month, and I know of other institutions with the same bed capacity with pay-rolls of from $10,000 to $12,000 per month. In other words, one class of hospital pays out in salaries and wages about fifty cents per patient per day, and the other about $1.20 per patient per day. These are representative well-managed American institutions.

I know of other institutions in which the cost per patient per day for salaries and wages is twenty-eight cents, which is too low, and of others in which it is $1.50, which is too high.

Municipal hospitals outside of the large cities are quite likely to have small pay-rolls. One reason for this is that the annual appropriation by the city government is kept down to the smallest possible amount. Another reason is that certain city officials and their clerks do, without cost to the hospital, work that private hospitals must pay for. For instance, the city treasurer handles the hospital's money, the city auditor audits its accounts and does part of its bookkeeping, the city collector collects its bills and the police department operates its ambulance system.

The hospital with a cost of $1.20 per patient per day for salaries and wages will give to its patients better service than does the hospital with a cost per patient per day of only forty-five or fifty cents. It will employ more nurses and more orderlies and its housekeeping will be better done. It will employ a competent chef and serve better food. It will maintain first-class pathologic, hydrotherapeutic, social service, Roentgen-ray and ambulance departments. It will furnish first-class telephone, front door, clerical and elevator service day and night. It will employ skilled mechanics and its up-keep will be so excellent that depreciation of the plant will not be appreciable.

It is generally recognized that the structural conditions of a hospital plant are a big factor in determining operating expense. A modern hospital built with reference to convenience and economy of operation will be much less expensive to maintain than one occupying old, poorly planned buildings.

Many hospitals have been built piecemeal. The result is a hodge podge, inconvenient to administer and requiring an excessive number of employees.

SCIENTIFIC WORK

Hospitals which do high-class scientific and educational work are bound to have higher costs than those institutions which do only routine clinical work. They will have a large paid staff doing laboratory and research work. A large intern staff will be necessary, and probably a number of paid, resident-staff men will be employed. All of these men will be furnished with board and lodging, and the salaries paid the men in the pathologic, bacteriologic, chemical and Roentgen-ray laboratories, and those paid the salaried resident staff doing clinical work will amount to a considerable sum. The outlay for laboratory supplies and instruments of precision will influence somewhat the per capita cost.

Hospitals having a reputation for doing high-class scientific work are likely to enjoy the confidence of the public to such an extent that they will have, from a medical point of view, a more important class of cases. The urgent demand on the part of patients for beds in these institutions will result in convalescent patients being discharged early to make room for the more critically ill. The beds will be kept filled with acute cases. Patients suffering with serious or obscure diseases cost more to care for than patients suffering with minor disorders. They require much more care and attention from doctors and nurses.

In the other class of hospitals in which the demand for beds is not so great many of the patients are afflicted with diseases of a more or less chronic nature, are allowed to remain in the institution for long periods, and, in a sense, are little more than boarders and make small demands on the nursing and medical staffs. Patients of this class require much less in many other ways than do acute cases. For instance, they require little laundry work as compared with acute cases. Hospitals catering to this class will get along with about one-half as many laundry employees, and the linen not being washed so often lasts much longer. Neither do these patients require such varied and expensive diets as do those acutely ill. Numerous other items of expense are similarly influenced.

AFFILIATION OF HOSPITALS WITH MEDICAL SCHOOLS

The hospital which is connected with a medical school usually does more for its patients than does the hospital without such connections, and this results in increased cost. I have no statistics of American hospitals covering this point, but the average cost per bed occupied throughout the year in the London hospitals connected with medical schools is about $600, and in those without medical schools $550.

PRIVATE ROOM SERVICE

The larger the proportion of private room to ward patients the larger will be the average cost per patient, as the cost of caring for a private room patient is usually double the cost of caring for a ward patient. This is one reason why municipal hospitals generally have a lower per capita cost as, ordinarily, they have no accomodations for private patients.

A number of hospitals provide paid resident staffs for their private service, thus materially increasing their pay-rolls.

There is a general belief that large institutions should have lower per capita costs than small ones. As a matter of fact, it does not work out this way in practice. The big institutions are generally conducted on broader lines than are the small ones; they have more varied activities. While they buy in larger quantities and are thus enabled to obtain somewhat better prices, it is much more difficult for them to enforce economies and to prevent waste. In the small institutions the superintendent is able personally to supervise most of the details and to enforce frugality in the use of hospital supplies. In the large institutions responsibility is divided. And as economy in purchasing supplies does not influence the per capita cost nearly so much as economy in using supplies the smaller hospitals usually have lower costs.

Some hospital officials assert that their physicians are extravagant and attempt to explain their high per capita costs in this way. This accusation ordinarily is unjust and not borne out by the facts. A study of the expenditures of a number of hospitals with a per capita cost of about $1.50 a day showed an average cost per patient per day for medical and surgical supplies of fifteen cents, while an equal number of hospitals with a per capita cost of $2.50 a day showed an average cost of nineteen cents per patient per day for these items. In other words, the hospitals with the higher per capita costs spent only four cents more per patient per day for medical and surgical supplies, leaving ninety-six cents of their excess cost to be otherwise accounted for.

The question has been raised as to whether or not it is practicable to standardize hospital costs. It seems to me that any attempt to do so must meet with failure. I can understand how the costs of individual institutions can be standardized, but I cannot understand how it is possible to apply cost standardization to hospitals as a body in view of the fact that the work done by them and the conditions surrounding them vary so greatly. It would be just as reasonable to attempt to standardize the costs of two watch factories, one of which is producing a fifty dollar watch, and the other a one dollar watch.

The wise hospital superintendent will try to obtain a reasonable per capita cost for his particular institution. not so high that it will invite charges of mismanagement and extravagance nor yet so low that it suggests parsimony and inadequate care of patients.

He will not attempt to make the expenditures of his hospital conform closely in all details with those of some other hospital, or group of hospitals, as he will recognize that each institution, owing to its peculiar conditions and the character of the demands made on it, is more or less a law unto itself.

12 West Sixteenth Street.

ABSTRACT OF DISCUSSION

DR. CLEVELAND H. SHUTT, St. Louis: In comparing our public hospitals with those of Europe, I think that the situation has been satisfactorily explained by the statement that the differences are due entirely to the governmental differences of the country. European institutions are controlled by more or less permanent influences; our institutions are subject to fluctuating influences; consequently, we cannot establish standards and feel that they will be maintained indefinitely.

The question of how we are to establish satisfactory permanent systems for municipal institutions ought to be solved by this and other allied societies interested in hospital work. We know of a number of cities which have expended immense sums of money, in some cases millions, for *institutions*, and the results have not been, to say the least, a source of pride. We know of cities that have spent moderate sums of money and have enjoyed good management for a period of a few years and then they begin to have unsatisfactory results. In only one or two of our American cities has a city institution of great size given continuously satisfactory service. I think that the Boston City Hospital can be cited in particular. This is a situation which ought to be corrected. I do not pretend to have a solution of the problem, but I have thought of a number of points on which I should like to offer suggestions.

The only way that we can obtain permanency of system for our American institutions is by establishing a medical service in them which will be so satisfactory to the people and profession that they will not permit a retrogression.

The essayist outlined a splendid and proper line of executive control, namely, a board of directors or trustees who shall have complete and full control of the institution in every particular—in the selection of superintendents, erection of buildings, purchase of supplies and appointing of all classes of employees, including the medical staff.

After a body of this kind is organized they should first give the best treatment to the patients who come to the institution. How can this be done? I believe it has been worked out with eminent satisfaction in a number of European hospitals, especially in Vienna, Berlin and London. In England the college hospital has proved eminently satisfactory. In Europe the best medical men in the community have charge of sections of public institutions of which they have full charge and for which they are responsible. The chief practically has control of the appointment of his associates and they form a complete and independent organization for each department. There is opportunity for continuous development of good men for the institution and this gives the public the proper confidence in the institution

Some of the best men in every community are willing and anxious to engage in public hospital service, provided they can be assured of permanency of position and freedom of opportunity for scientific advancement.

Every city, of course, has its local conditions. A city which has only one medical college can work out its public hospital organization without much trouble. There may be difficulty in installing the hospital-college plan, because certain medical men may have positions of medical influence and may hesitate, in the beginning, to accept an inferior position, but this is, I think, for the medical profession to consider seriously. I believe that we hospital men should decide what we would like to do, then go before the medical profession stating that we desire their assistance in establishing something which is going to be permanent for them, for us and for the community, stating that it is going to require some sacrifice on their part in the beginning. I believe that medical men will sacrifice willingly, because I have seen a demonstration recently in my own city, in the reorganization of one of the universities there in which the entire faculty resigned. The majority of them could have held their positions without any question, but they simply resigned for the good of the cause. They said to the board of directors, "You gentlemen appoint a new faculty with the idea of securing as good men for the school as the facilities and accommodations will attract."

Mr. W. B. Stratton, Detroit: Just a suggestion on the matter of plumbing in connection with the hospital. I find that the plumbing boards of this country have developed thoroughly along certain lines, but have not as yet taken up the plumbing of hospitals except to put out catalogs and mark "hospital plumbing" on them. "Hospital plumbing" is their ordinary every-day office-building and hotel plumbing picked out as though it would do for a hospital. I would suggest to the surgeons that they try to think out what they consider ideal in the way of fixtures. They will find the plumbing trade ready to meet them.

THE PSYCHOPATHIC HOSPITAL IDEA *

E. E. SOUTHARD, M.D.
BOSTON

Naturally we are still much occupied with preaching the gospel of psychopathic hospitals in America, since, after all, the realization of our long-cherished ideals is extremely recent (Psychopathic Ward of University of Michigan Hospital, 1906; Psychopathic Department of Boston State Hospital, 1912; Phipps Psychiatric Clinic of Johns Hopkins Hospital, Baltimore, 1913). Nor is the foundation work, which led to the establishment of these three somewhat similar but in many ways contrasted institutions, a matter of very ancient history.

To be sure, Griesinger's idea was early implanted in some American minds. My colleague, Dr. D. H. Fuller, has called my attention to Dr. Pliny Earle's utterance[1] of 1867.

> Carbon agglomerated is charcoal. Carbon crystallized is diamond. What charcoal is to the diamond, such I believe, is the psychopathic hospital of the present compared with the psychopathic hospital of the future. . . . When the defects which I have mentioned shall have been thoroughly remedied by a comprehensive curriculum, a complete organization, a perfect systematization, an efficient administration, the charcoal now just ready to begin the process of crystallization will have become the diamond and the world will possess the psychopathic hospital of the future.

The movement which interests us is more modern. I think especially of Mosher's Pavilion F; of the New York Lunacy Commission's Pathological (later Psychiatric) Institute; of the institution of modern clinical laboratories at Danvers and Worcester, Mass., and at the Government Hospital for the Insane, Washington, D. C. Earlier still we must remember Cowles' work of introducing the seminary idea into insane hospitals and of encouraging science of several sorts in their laboratories, of the early Germanizing and later individual stimulation of American psychiatry by Adolf Meyer, of the extraordinary address of S. Weir Mitchell[2] at a meeting not so long ago of the American Medico-Psychological Association which awoke echoes all about. Back of all this the university and modern scientific movement have contributed in ways impossible here to trace.

I embraced the opportunity to speak before the new Section on Hospitals of the American Medical Association because I knew that many, if not most, of its members would be practical men in charge as a rule of general hospitals. From my general hospital experience I know how important are the proper arrangements for the insane in general hospitals, and I wish to urge unconditionally that their superintendents look to it either to give their insane patients proper accommodations within general hospitals or to spend time and energy getting their local communities to establish proper psychopathic hospitals.

Some of the best general hospital superintendents I have ever known have blinked this problem. Most of you are quite cognizant that excited and delirious patients are not getting proper treatment in general hospitals. The excuse for drugging and tying down the excited and delirious in general hospitals is that other patients are prevented from suffering thereby! The justification for chemical and mechanical restraint is therefore the greatest good to the greatest number.

The reply is simple. There is no excuse for not treating the excited and delirious in general hospitals by the methods long since elaborated in hospitals for the insane. These methods—hydrotherapy, special attendance, isolating-rooms and common sense—can all be supplied in general hospitals except hydrotherapy and isolating-rooms. I have no doubt that all will agree that this proper technic of therapy is not applied in more than a handful of general hospitals, if in so many as a handful, in America.

This topic is so much in my mind that I must be given leave to introduce my notion of the varied functions of the psychopathic hospital herewith. I would call especial attention to forthcoming work by Dr. Donald Gregg, who will give a statistical foundation for my statements, discussing the mortality of delirium tremens in general and insane hospitals, in a communication to be presented at the first annual conference of the Psychopathic Hospital in Boston. I beg leave here to quote Gregg's conclusions:

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

* Being Contributions of the Psychopathic Hospital, Boston, Mass., No. 1913.26. Bibliographical Note—The previous Psychopathic Hospital Contribution entitled. "A Study of Human Behavior" by Prof. M. Yerkes, will appear shortly in the Boston Medical and Surgical Journal.

[1] Earle, Pliny: The Psychopathic Hospital of the Future, address at laying of the corner stone of the General Hospital for the Insane of the State of Connecticut, June 20, 1867, Utica, N. Y., 1867.

[2] Mitchell, S. Weir: Address before the Fiftieth Annual Meeting of the American Medico-Psychological Association, Philadelphia, 1894; Proc. Am. Med.-Psychol. Assn., 1895, 1.

> 1. The results of the eliminative treatment of the deliriums with relative freedom and hydrotherapy, and a minimum amount of medication, far excels in effectiveness the usual treatment by restraint and depressant drugs in cases of the symptomatic psychoses, including alcoholism.
>
> 2. Every general hospital should be provided with the facilities for treating properly cases of delirium. Such facilities should include isolation wards where quiet is not essential, and continuous bath apparatus for hydrotherapy.
>
> 3. The present situation in Boston, where no general or insane hospital is ready to take and adequately care for cases of simple delirium tremens, is one that should be promptly remedied by the establishment of a public hospital properly equipped for the treatment of inebriety.

But, you will ask, how is the problem of delirium tremens the special task of a psychopathic hospital? Surely it is not the major task thereof. Yet I conceive that it will be an important task of every reception hospital constructed on modern lines to indicate by its mortality tables for alcoholics and by ocular demonstrations of its hydrotherapeutic and non-pharmacotherapeutic methods what similar reception units should be accomplishing in general hospitals.

In this connection I shall quote a brief paragraph from my annual report as director of the Psychopathic Hospital in Boston. Although perhaps the modern psychopathic hospital should not have alcoholism as its major task, yet as to the Boston institution:

> It is to be observed that many cases (thirty) which have eventually to be classified as delirium tremens do in some way get admitted to the Psychopathic Hospital. A still larger number of cases (fifty-four) of the allied disease, alcoholic hallucinosis, are admitted under the temporary care law. The latter, or hallucinosis group, is not specifically excluded by law (as is the delirium tremens group) from admission. It is probably true that the Psychopathic Hospital is somewhat better able to take care of both of these groups of cases than any other local institution, but it is also true that these cases are taken care of at the expense of the non-alcoholic insane, occupying the beds of persons falling more strictly under the authority of the State Board of Insanity. Common humanity and mistaken diagnoses account for most of our admissions of delirium tremens cases. It would seem that a Boston branch of the state hospital for dipsomaniacs should be strongly considered by the proper authorities, and that not only the delirium tremens cases, but many other somewhat curable cases of alcoholic psychosis might well be classified at such a branch.

It is well known that the whole question whether there should or should not be special hospitals for dipsomaniacs cannot be regarded as settled, for the whole country at all events. It will remain the task of numerous, nay the great majority of, general hospitals, to take charge of the acute alcoholics of the community. To do this adequately, the majority of such hospitals will need extensions and new hydrotherapeutic arrangements.

I have plunged *in medias res* by stating to you the mission of the Boston Psychopathic Hospital, which should occupy us for some years, namely that of demonstrating some pretty well-known truths concerning the treatment of delirium, whether delirium tremens or other forms. There is, however, a possibility of novelty for us in this field, as some forthcoming work by H. M. Adler, Chief of Staff of the Psychopathic Hospital, will show. He has secured a quantitative record in the red blood-cell count of the effects in reducing the count in certain cyanotic patients by means of prolonged baths. In certain instances he has been able to predict the probability of an excitement in a patient by the observation of oncoming cyanosis.

What are the major problems of a psychopathic hospital? I have perhaps indicated to you that I feel that they are largely, or at all events extensively, somatic in character, yet a review of the communications to be read on the occasion of the first annual conference of the Psychopathic Hospital in Boston, to be held June 24, 1913, will demonstrate that these problems are much wider in scope than those with which I have before dealt too much *in extenso*.

In the first place, let me insist that far too little stress has been laid in this country on sociologic and psychologic matters in their relation to medicine. In a recent analysis of papers produced by officers in the state institutions for the insane in Massachuetts, I found 43 papers dealing with structural changes in the nervous system, 15 papers dealing with somatic non-nervous changes, 12 dealing with general considerations, 11 dealing with strictly clinical considerations and 7 dealing with psychologic matters. It is clear that such a distribution of interests is by no means a natural one. I found that a fair distribution of interests in our first annual conference divided the medical and social results of our first year's work into about equal parts, from which I conclude that the outpatient and social service relations of a psychopathic hospital must be among its most important functions.

I shall dismiss the remainder of my discussion in brief paragraphs, although I know that each of the main topics would require a discussion somewhat similar to that which I have given of our mission with respect to delirium.

We have at least as important a mission with respect to syphilis. When the patients admitted to a state institution for the insane show positive Wassermann reactions in 22 per cent. (H. L. Paine's data, Danvers State Hospital), or, as at times for certain months at the Psychopathic Hospital, from 25 to 30 per cent., it is high time that social workers and economists as well as physicians should begin to take an interest in that field of mental hygiene which shall seek cooperation with the sex hygiene propagandists. Two features of the syphilis situation have struck me during the last year. In the first place, Dr. W. P. Lucas has shown the great importance of syphilis in the children and adolescents coming to the Psychopathic Hospital outpatient department. The percentages are by no means final, but arrest attention. The relation of syphilis to specialized defect of the mind, coupled with defect in auditory imagery, has also received attention in our examining-rooms. It has been possible to advocate special educative measures in certain cases with specialized auditory defect in imagery. Auditory defect in imagery has been shown to be much more common than visual defect in imagery. Certain backward children, as a result of Dr. Anderson's work, can be given specific visual instruction to replace the auditory type used in many schools. The problem of certain "terrors" in school may thus be partially met.

In the second place, the novel suggestions of Dr. Homer Swift of the Rockefeller Institute give opportunity to optimistic therapeutics in the field of general paresis and other forms of cerebrospinal syphilis.

Here is a field in which a psychopathic hospital can work far better than the state institution of older style, since many hands, medical, nursing and technical, are at hand in a psychopathic hospital equipped for the pursuit of general medicine.

With these inadequate words I leave the topic of syphilis in a psychopathic hospital; but of course, syphilis is a problem which is in many ways transmedical and will require the cooperation of social workers and economists to the last degree if we are ever to "scotch the snake."

I have studied the social service movement with a great deal of interest and have made many friends among the social workers. There is a new but growing sense of the value of social work, and the accompanying sense of pride on the part of the social workers themselves is much in evidence. For this I do not blame the social workers, but we must all fear that the well-known spiritual pride of physicians meeting this now as yet uncertainly founded pride of the social workers will forbid the best coöperation for some time to come. Perhaps this is particularly true in mental medicine; for alienists have long been social workers in their fashion. They have been more truly economists and social workers than the general practitioners or specialized physicians of our general hospitals, and have been approached only in their economic and social sense by the superintendents of general hospitals. As you know, however, the latter have been recruited in many significant instances from among superintendents of hospitals for the insane, so that the group represented by the Section on Hospitals before which I am now speaking is a group in which the existent sense of social service is perhaps largely derived from long-standing medical contact with psychopaths. The new movement requires cooperation and coordination between physicians and the new lay forms of social service. Progress should be made in every community to determine the dimensions of the social problem as it affects the psychopath. In many states the minor wards, the adult poor and other largely non-psychopathic dependents have been pretty adequately cared for by systems employing lay visitors, investigators and other agents of centralized boards. Social service for psychopaths, except those who are met in the various classes just mentioned, is as yet non-existent in any systematic and well-rounded form. Estimates will be shortly available concerning the dimensions of this problem also. For example, the Psychopathic Hospital Outpatient and House Service in Boston has been shown to demand very probably about eight social workers, and the problem of the rest of the state, should it remain at the present level, could perhaps be covered by seven more. Experience, however, shows that preliminary estimates are, as a rule, too low for this form of work. The leaders in social service do not yet understand adequately the difficulties in social service for psychopaths, having had their minds riveted on problems of investigation, financial and social relief not systematically involving the somewhat less predictable proceedings of the psychopath.

So much for the suggestion of problems being attacked in the modern psychopathic hospital. I have brought into stronger relief the problems of delirium, of syphilis and of social service than others. Nor have I mentioned the more intimate, complex and difficult problems of pathogenesis and etiology in mental disease which the workers attracted to a proper psychopathic hospital will engage in. I had not thought it worth while to present such matters to the section before which I report, and refer my hearers to special contributions elsewhere. Let us hope that American enterprise and imitativeness will far more speedily bring about the dotting of this country with new hospitals, each an advance on its predecessor and, in conformity with the American spirit of autonomy, no one exactly like another. Some say there should be a psychopathic hospital in every city of fifty thousand inhabitants; others say in every city of a hundred thousand inhabitants. Such claims refer, of course, rather to receiving hospitals with an immediate diagnostic and therapeutic aim than to more elaborate institutions of the Ann Arbor, Boston and Baltimore types. The necessity of smaller psychopathic hospitals would be largely removed, should the general hospitals of the cities in question think it worth while to face the problem of the acutely insane of their districts.

Whose fault is the present reign of ignorance as to the proper treatment of the acutely insane? The practitioners in neurology say that they have warned general hospital superintendents concerning their duties with respect to installation of baths, special attendants and isolating-rooms for the delirious. The surgeons and physicians say that these matters are largely in the hands of interns under the present system; and some say that proper residents of longer experience will meet the problem. I am not sure that we can absolve the neurologists and even more the hospital internists from responsibility for the poor treatment which the insane receive in general hospitals. I am certain that an organization like this Section will do much good, for its members can push on the financial side of the problem by providing ways and means for the installation of proper nursing and other external arrangements. To-day is certainly an era of busy interest in sociology. The psychopathic hospital in a community is bound to be one of the most concrete sources of enlightenment as to psychopaths, and every society for mental hygiene, for sex hygiene, for the amelioration of alcoholism, for eugenics, should make it part of its business to help start a psychopathic hospital with its outpatient service in every community in which there is any hope of awakening social sense.

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ABSTRACT OF DISCUSSION

Dr. John A. Hornsby, Chicago: A week or two ago I was called to account because of a page in my work on hospitals concerning the restraint of patients. I am wondering whether Dr. Southard has run across the same class of cases as we have and what he would do with them. For instance, a patient who has been operated on develops surgical delirium tremens. He begins to yell and fights if you undertake to prevent his yelling. He fights against every sort of restraint. If you let him go to the limits of the room and his surgical injury is such that he can be allowed to go there without danger, then he fights to get outside. What would Dr. Southard do with a patient of that sort?

Dr. E. E. Southard, Boston: We cannot treat these cases in the ward of the general hospital as it exists at present. The method of treatment which you have carried on in the general hospital as at present constituted seems to have something to do with other patients in the vicinity. Now we should not be averse to treating a patient after a certain fashion because there are other patients in the vicinity. We should have proper conditions. We should have isolation rooms. We should have wards with safety deposit vault ventilation principles in which noise could be eliminated. I do admit that is really a problem. The general hospital superintendent will have to contrive to have some money spent on modern devices for prevention of noise, prevention of the transmission of noise, so that it will not disturb the neighborhood.

In the next place, if it is an opened peritoneum that the patient might take the sutures from, the restraint is obviously necessary. I suppose no one would deny the importance of keeping the patient's hands out of his peritoneum. However, many of these cases are under a certain amount of depressant treatment anyhow, without resorting to a drug. I take it that that question is hardly a problem of great moment.

But if you have some properly ventilated noise-proof ward in your plant, equipped with modern hydrotherapeutic appliances, you will, I think, reduce a good deal of the violence which characterizes many of the general hospital wards in which I have worked.

According to Kraepelin a delirious or excited patient should not be strapped to the bed. If he does not stay in bed he should be placed in a warm bath of blood heat, and if he will not stay in this bath with gentle persuasion he should be put into a moist, warm pack for a limited period. He is given to understand, if he can understand what is going on, that it is to be for a limited period, an hour or two;. he should then be removed and placed in bed. If he will not stay in bed he should be placed once more in the warm bath, and if he will not stay there, once more in the pack. This cycle of bed, bath, pack is repeated ad libitum through the night, if you have the nurses. You can seldom find a superintendent who will give you nurses for this purpose, because they are not to be had. Still this is indicated by the therapy of the patient, and why not do the best for the patient, if you are going to permit him to recover? There is hardly a case of the non-surgical sort in which there is not positive danger of infection of the wound that will fail to be benefited by this simple hydrotherapeutic procedure which Kraepelin has advocated and which has some thirty years of history back of it.

So I say a new type of ward and new hydrotherapeutic measures will meet most of the problems of the delirious patient met in the general hospital. There might be a few, as Dr. Hornsby mentioned, whom we might have to put in the insane hospital.

How many patients of this kind do you think that there are in a year in your hospital, Dr. Hornsby?

Dr. Hornsby: In a hospital of 350 beds, of which I have been in charge, I should say three a week. The percentage of surgery is large. We do in that hospital from twelve to fourteen major surgical operations a day.

Dr. Southard: Well, then it would not cost an extraordinary amount of money to put up a plant like that in the Belfast and London institutions and put in hydrotherapy and treat these cases in that way.

Dr. John A. Hornsby, Chicago: It is not the cost of such an institution in that case, I take it. The cost is in transportation of the patient, especially from the general ward or from the quiet room, to such an institution and the cost to the other patients in such a case.

Dr. Arthur B. Ancker, St. Paul, Minn.: It seems to me that it is not so much a question of the noise, and the consequent disturbance of the other patients, as it is a question of preventing the patient from doing great injury to himself. Not an insignificant proportion of the surgical patients who have developed delirium tremens have wounds that make it important that they should be, as it were, immobilized; in some cases we are told that they must not be allowed to sit up in bed, that there must be no exertion whatever; so even supposing that we had the hydrotherapeutic equipment, in many cases the patients would necessarily be deprived of this treatment because we would be unable to take them from their beds. We, at the hospital, have had many opportunities to consider all these conditions, and, while I believe that the treatment which is most in vogue in general hospitals is not altogether humane or desirable, yet I have seen two or three hundred cases in thirty years and I have rarely seen one in which we did not have to do something in restraint of violence, and I cannot quite understand how, under the circumstances, one could well avoid the use of restraints or the use of drugs or the use of both of them. The police ambulance brings us many victims of long debauches suffering from delirium tremens, probably a couple of hundred a year, and I quite agree with you that the hot pack, hydrotherapy and a sufficient number of nurses are essential for the proper care and treatment of that class of cases, but it is not to that class that I am particularly referring; we have to deal with a condition that complicates not an inconsiderable number of the surgical cases that appears a good deal like delirium tremens; these are the cases that we have to keep in bed, that we cannot put in hot packs, and that we cannot take to the hydrotherapeutic room, even supposing we have one; the kind of a case that leaves us nothing else to do but to use restraint or give some kind of a drug to put the patient to sleep temporarily.

Dr. E. E. Southard: I should like to say a word as to restraint, with respect to the bath-tubs. Really it is not a restraint and those little knobs that one of the plumbing companies puts on the tubs which permit you to tie the patient in ought to be left off.

Dr. Rupert Norton, Baltimore: Suppose you have them in a pack?

Dr. Southard: The pack is a restraint up to a point. The patient, however, as I say, is told at certain times what it is for and, if he understands that, so much the better. If he cannot understand what is going on it goes to restrain him.

There is no psychologic objection to restraining an unconscious person, I think. There is an objection on the part of psychology in this instance because the patients understand, but there would be really no objection, I take it, to restraining an unconscious patient. Of course persuasion is, in a sense, a sort of restraint; you exert a mental effect on the patient. The discussions of Dr. Hornsby and Dr. Norton have led to a description of a small number of delirium cases, whereas what I was talking about was the large group of delirium tremens cases. In almost eight hundred necropsies at the Boston City Hospital about 8 per cent. proved to be really mental cases, chiefly cases of delirium tremens. Now I am quite convinced from the result of these necropsies that a good many of the patients might not have died if proper treatment had been employed. Of course one might say, "What do we want to treat them for? Why not let them die?" That is, however, not humane.

Dr. Cleveland H. Shutt, St. Louis: I believe that most delirium tremens patients can be treated by hydrotherapy, but we know that there are certain cases in which this treatment is impossible. A patient has been shot in the abdomen and it is necessary to place drains in the abdomen in several places. We can use hydrotherapy to a certain degree, if we are enthusiastic in that direction, but we can accomplish most for the patient by using restraint and drugs. Traumatic injuries, complicated by delirium tremens, will also require judicious treatment without frequent transferring from bed to tub, or even placing in water, and risking danger of infection.

Dr. H. B. Howard, Boston: I am convinced that there is more or less ill-advised restraint in our general hospitals. I think that it comes about in this way: A delirium case develops in the night and there is nobody but the house physician and the superintendent there, and if the rules of the hospital are not such that the superintendent has to be called in to each one of these cases, there is no doubt that there is ill-advised restraint applied, because it is applied by the young man who has never had any training in an insane hospital and it is applied in a crude manner.

Dr. George F. Jelly used to say that before you tried restraint you ought to see what light and society will do for your patient. Now we would add to light and society continuous bath.

Dr. E. E. Southard, Boston: I wish that the state board would request the superintendents of general hospitals to obtain a record.

Dr. Howard: If they had any authority over them doubtless they would. I admit that there is a good deal of ill-advised and poor restraint. Perhaps restraint is necessary in a few cases and it can be so applied as to be of little damage.

HOSPITAL AND ASYLUM WORKSHOPS

SOME POSSIBILITIES OF HANDICAPPED LABOR *

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It is so hard for well people to make a living that the casual thinker will not believe it possible for sick men to work effectively and without harm. When the invalid is poor we perform but the natural part of charity if we give him medical treatment and save him from the necessity of work. Yet experience has shown that in many chronic illnesses effective and remunerative work may be accomplished with physical and moral benefit to the workers.

The object of this paper is to suggest the possibility of workshops for the chronic invalids who haunt the outpatient departments of the great hospitals and who have collectively a great deal of efficiency and skill, though they cannot find places in the usual fields of labor.

We do not have to search long for suggestive examples of work among handicapped people. The blind have thriving industries, the cripple schools have for a long time been engaged in teaching their pupils trades adapted to severe limitations. One of the most refreshing activities of modern institutional life is to be found in the schools for feeble-minded such as that at Waverly, Mass., where, under Dr. Fernald, there is an effective system manned almost wholly by patients who in the old days would have been idle. In the insane hospitals all over the world the patients are more and more generally given work to do in connection with the farms and households, and lately in workshops like that of Dr. Tuttle at the McLean Hospital in Waverley and at the Hans Schönow under Dr. Laehr in Berlin. Besides all this activity in charitable or semicharitable institutions, there has of late years been a remarkably effective use of modified work as a remedy in the sanatoriums for the treatment of nervous exhaustion among people of means who have overworked and overworried or who are suffering from the effects of too much idleness. These industrial experiments have all been so hopeful in their results, so beneficial to the workers and so surprisingly productive that it seems almost certain that important developments may be expected from outpatient industries.

My own experience has been in sanatorium work with nervously exhausted patients. I have found that among persons of education and taste the ancient handicrafts offer a most interesting and profitable means of regaining strength. I believe that some modification of this crafts-work system will be easily available for hospital shops. With a basis of this kind we should be able to show the therapeutic possibilties of work in a large range of cases. The economic possibilities for hospital patients remain to be proved, but they are decidedly interesting.

Crafts work is a vague term and may be easily misunderstood. It means, generally speaking, work by hand instead of by machine, and it includes almost any useful and ornamental product, from a rug to a coal scuttle. The important difference is that the crafts work at its best is confined to products that can be made better by hand. The world is beginning to appreciate that a great many articles of daily use are best produced in this slow way. It is true that the finest work of the craftsman, the goldsmithery and silversmithery, the wonderful dyes and weaves that make inimitable fabrics, can be done only by highly trained workers. But there is an enormous mass of routine and preparatory work in the crafts, and this work can be done perfectly well by handicapped persons if they are carefully directed and controlled.

Men are thrown out of employment for very trivial reasons—it does not follow that they are good for nothing because they fail to fit the particular job they happened to find available. The new system will gather up these sick and discarded workers and adapt them to work which will be graded and controlled to meet any degree of handicap. There will be some agreeable surprises for those who bring this plan to pass. Many a woman considered unfit by the great industries, many a man injured or worn out by the grind of the factories, will prove to be highly efficient under conditions that are slightly altered to meet the especial need. The wasteful policy of the regular industries may or may not be necessary, but it is likely to necessitate a secondary system of labor. Some day it will be impossible for society to support the number of sick and idle; then the new system will come in earnest.

In their beginning the new workshops will have to be subsidized, for they will count the worker more than the machine and that will mean small returns at first. But there will be few high-salaried officials under the new plan and the profits will go to the workers. That is one of the reasons why such a system may be successful financially in these days of struggling industry.

As I have watched handicapped labor—grateful, loyal labor it usually is—I have been deeply impressed with its possibilities; for I have watched also the slow steps of the dissatisfied and unscrupulous workers in some of the regular industries and I am not sure that the handicapped workers will fall so very far behind.

In any event, the new work must be a great deal more than a plaything. We have no right to ask our handicapped operatives to give their time and strength, even if they improve physically in the process, unless the work is worth while, unless it has a ready market value. That is the final test.

From personal experience with a different class of patients I believe that hospital workshops of varied kinds may become nearly or quite self-supporting. During the past few years I have, as a matter of fact, been able to build up such a business in a small way and a good deal of the time it has been made to pay. This work has been conducted as a private venture with very little outside help.[1] The workers, it is true, have been people of high intelligence and not in need of self-support, but they had given up, they were not able to succeed under ordinary conditions, so the principle is the same. This small business has been under way nine years. During the past four years it has been a little more than self-supporting, although before that it was a decided financial burden.[2] The work has succeeded because we have always had expert workmen guiding and directing at every point. Such shops are, of course, partly professional. I believe that this professional combination must always be followed. Handicapped workers alone are almost surely helpless; working in cooperation with experts they may become a tremendous source of power.

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

[1] Twice within the past nine years I have received a grant of $1,000 from the Proctor fund to assist in the study of chronic diseases.

[2] Owing to enlargement of the plant the workshops have recently failed again to meet expenses.

We have tried hand-weaving, metal-working, wood-carving, leather-working, pottery, basket-weaving, and cement-working. We have dropped all but the pottery, the hand-weaving and the cement-working because we could not see our way to making the others pay.

Last year five persons working in the pottery made and sold six thousand dollars' worth of pottery. Two of these persons were professional potters, one was an apprentice, and two were former patients who because of illness could not meet successfully the conditions of life outside. One of these patients, a woman, had been a surgical patient with profound neurasthenia of long duration. She began her work with little power of sustained effort. The other was a young man so handicapped physically that he might not have been successful even here without medical management. I present this experience simply to show that the idea of using the handicrafts is not altogether impractical.

The money value of handicapped labor has been demonstrated again and again, in institutional life at least. Last summer a small group of men patients at the State Colony in Gardner, Mass., under Dr. La Moure, produced forty thousand dollars' worth of supplies from the hospital farm. That return, at least, would not have materialized without the use of handicapped labor. We hardly need to be assured that the men who worked on that farm were not overworked and that they were physically and mentally better for their experience.

Out on the Pacific coast, Dr. Philip King Brown has within the past two years established a pottery, in which, under expert guidance, a group of convalescent tuberculous girls are paying their expenses—a dollar a day—while they are under sanatorium treatment.

We are beginning to see the possibilities of a principle, which, given systematic application, may change the face of charitable affairs, a principle which may be expected to restore many discouraged and enfeebled workers to full efficiency.

There are many trades and crafts which may be adapted to this purpose. Some of the craftsmen in my shops have been experimenting for the past two years with ornamental cement work as a possible field for hospital shops. We have found, among other things, that practical and beautiful flower-pots and an excellent quality of brick and tile may be made cheaply and expeditiously by people with little strength. We are finding in hand-weaving a field of the most brilliant possibilities. It might be supposed that in these days of machinery, hand-weaving would be a hopeless thing. On the contrary, it is possible to do by hand especial and individual patterns that the power looms would never stop to undertake. There is a ready market for these specialties in weaving and cement.

If possible, we should have some sort of central bureau that can conduct extensive experiments and that can oversee the entire field and help to establish practical workshops where they are most needed. Such a bureau could conduct a normal school for the training of teachers and assistants. A central office would hasten the day of accomplishment by many years. It would save expensive mistakes and might supply materials, designs and formulas, besides answering many puzzling questions which are sure to arise in connection with the technical part of the work and in relation to the effect of occupation on individuals and classes.

There are, of course, pathetic limitations to such a plan and many a willing worker could not succeed; but is evident that a great deal might be accomplished and there ought not to be a long delay in realization.

My suggestion is a definite one—that such workshops as seem most practical be experiementally established in connection with the outpatient service of a few of the general hospitals. In this way we should soon find out in what particular ways employment would supplement the work of the medical and surgical departments. I am sure that the workshops would prove of tremendous value to the social service workers, who are finding it more and more difficult to secure occupation for their charges, and who will tell you without hesitation that vice and crime breed best in idleness.

The plan must not be left to be worked out by enthusiastic, but untrained, people. Such a course would bring delay and discredit on the whole system. Medicine, social service, the crafts and business management, these are the elements that must be brought together if we are to see the best results. I believe that the thing can be easily done and I recommend the matter to your serious attention.

Until the time when this industrial branch of medicine can be taught in a larger and better way, my own little shops at Marblehead are open for demonstration and as a training-school for nurses or craftsmen who wish to go as far as we have gone. It gives me great pleasure to be able to say that the superintendent and trustees of the Massachusetts General Hospital have already seen fit to authorize the establishment of an outpatient industrial department on the lines of the Marblehead workshops. This Massachusetts shop will be in operation within a month, so that it soon will be possible for visiting men to study the principle under actual hospital conditions.

MUNICIPAL HOSPITALS AND THEIR RELATION TO THE COMMUNITY *

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Speaking broadly it may be said, without fear of contradiction, that the municipal hospitals of this country are a disgrace from almost every point of view and do not serve the purpose they should in any respect. The exceptions can be counted without difficulty on one's fingers. One of the best is the Boston City Hospital, and the worst, considering the city in which it is situated, is the Cook County Hospital of Chicago. Between these two there are hospitals of all grades. The new Bellevue Hospital in New York could in a few years become a noteworthy institution, but there are many conditions which stand in the way of its development along the best lines possible. In Baltimore there is the beginning of an excellent institution. The same may be said of Cincinnati and of some other cities. Throughout the country there are many well-built hospitals, but there their value almost ceases.

Let us stop for a moment to compare these conditions with those which exist in Germany. There the municipal hospitals are the best in the world, and many towns with a population less than that of the American cities I have mentioned have first-class hospitals from every point of view. Recall for an instant the famous hospitals in Berlin, Hamburg, Cologne, Düsseldorf, and many others. Why should there be such a difference

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

when America is so wealthy a country? In Germany hospitals are built and managed by experts. First, there is a most careful consideration of the site by hospital and municipal authorities, and, when this is chosen, the greatest care is exercised in drawing the plans for the hospital, a task again performed by an expert. When the hospital is built, its management is entrusted to trained men. The hospitals in all German cities in which there are medical schools are used by the medical schools for instruction and scientific work, and where there are no schools, the best physicians in the town make up the staff of the hospital. In Germany it has long been recognized that the best service is obtained in any hospital by having it associated with a medical school, and, if that is not possible, by at least having the leading medical men of the community in charge. As a result of this broad point of view, the hospitals in Germany lead in almost every way and are the ones to which we all turn for instruction, not only in the practice of medicine, but in hospital construction as well.

It is not altogether easy to explain why the Germans have taken this lead, but there are certain fundamental facts which have played their rôle. The scientific mind of the German has led him to work out this problem as he has others and become a master in it. But why should he have given so much attention to hospitals? Because he has recognized what hospitals mean to the welfare of the community. Again, their development has been absolutely free of the evil influences of political parties. In brief, these may be considered the leading reasons for the position of German hospitals at the head of all others. I shall, as I go on, develop some of these thoughts further and show why it is that America is still so far behind.

In Germany hospitals are show places, like schools, opera-houses, and other municipal buildings, while in this country we would seldom take a stranger to see our municipal hospitals, but rather divert his attention to other places more attractive.

It would require too much time to take up the question of municipal hospitals in France, England and elsewhere, and it is not necessary for the purpose of this paper. All I desire to do now is to point out our own deficiencies as compared with the best and try to show how our defects may be remedied and how we may take an equal rank with Germany in this part of our social life.

I stated a moment ago that the German had built his hospitals so perfectly because he saw what they meant to the welfare of the community, and here I think I may well draw your attention for the moment to one of our national traits, one which has its fine as well as its evil side, and that is our carelessness to loss of life. Yearly, through our indifference, our haste and readiness to put up with evils we might easily control, thousands of lives are needlessly lost by death or wasted by illness. We are improving in this respect, but how slowly! This thoughtlessness has led our cities to the poor construction of hospitals and their still worse administration, or to failure altogether in building hospitals. It is this indifference which accounts for the continued pollution of our sources of drinking-water and the constant prevalence, as a result, of typhoid fever, another cause of loss and waste. When we have had hospitals to build, whom have we selected to do this? Often men absolutely incompetent, who know nothing of what a modern hospital should be, and who do not take the trouble to inform themselves. The best architect cannot build a hospital from intuition. The modern hospital is too complicated a structure to be erected without most thorough study, and the best architect will fail unless he associates himself with those who know the inner administration of a hospital. Plans for hospitals have usually been called for from local architects, who have not the fundamental knowledge necessary, or the architect has been appointed because of social or political influence. I shall not lay too much stress on this point, for we all know how few of our municipal hospitals can be compared at all favorably with those of Germany. The new hospital at Cincinnati is an exception and we may well be proud of it. This is largely due to the study of Dr. Christian R. Holmes and the time and devotion he has given to working out and perfecting the plans. There is no reason why from now on our municipal hospitals should not become models of perfection so far as construction goes.

None will deny that many of our failings are due to political conditions in our large cities. The system of political spoils has interfered in every way with municipal undertakings. When money has been secured in one way or another for the building of a hospital, it has often been extravagantly expended, or wasted through incompetence, or stolen by dishonest contractors. As a result, the community did not get what it should have in the way of a building. This, however, was not the final step in the degradation. After the hospital had been built, it was put in charge of a superintendent who knew little or nothing of his duties, through his "pull" or because some politician wanted to find an easy place for an old and worthless henchman. With this start it was quite impossible to secure the services of the best physicians of the community, for the administration being under political influence, the term of service was most insecure, and at the same time the selection of attending physicians and surgeons did not insure the confidence of the public. The final and general result has been that our municipal hospitals are institutions which the public is now generally ashamed of, and it has good reasons to be.

I have sketched hastily the main conditions of our life which have brought about this most unsatisfactory condition. We are a young country, we have not been inclined scientifically until within a short period of time, we have been and are still extremely indifferent to life and we have been for years in the hands of political ringleaders. These are general principles which with but little change can be applied to almost all of our communities, both large and small. Politics, as thought of in the popular way, has been a game and a business in this country and has influenced our communal life in many ways, both for good and evil.

It may now be asked, What can we do to improve conditions? I do not think that this will be found a difficult task. Our communities are awakening to their physical needs and learning that they need not be playthings for a group of dishonest politicians. All that our communities need is education. Each of us needs education along many lines, and it is not surprising that our people, who have up to the present led easy and successful lives, have paid but little attention to their physical ills and discomforts. The easy conditions of the past have changed, however, in the last few years, and living is no longer easy for a large mass of the population, whose needs require careful attention. A successful, happy community is a healthy one. To be healthy, the community must be provided with those conditions which keep it from being sick and which take care of it when it is sick. The first and foremost requirement to this end is abundance of pure drinking-water, and the second is one or more hospitals.

How many hospitals does a community need? This, of course, depends somewhat on the size of the community, but not altogether, for certain ailments will appear in every community. Where there are children, we shall have the contagious diseases of childhood, and these diseases cannot be cared for in the same building with other non-contagious or non-infectious diseases. In larger cities, the needs of hospitals for various diseases or classes of patients increases; while generally these might be on the same plot of ground, yet it would not always be wise so to construct them.

In a large city there is need of a general hospital for acute medical and surgical cases; one for chronic cases, both medical and surgical; one for contagious diseases, including syphilis and gonorrhea; one for tuberculosis, and one for insane patients. For all of these there should be outside the city at no great distance convalescent homes. I do not think it is worth while in this paper to attempt to draw up any scheme as to the number of beds required, or how a hospital or hospitals of this kind should be constructed. I wish merely to make plain what the needs of a large community are, and what the duties of the community to itself are. It must care for its sick and it should care for them in the best way possible. A patient cannot be given too good care. The quicker he gets well, the greater the saving in the cost to the community. Health means wealth, and a community can well afford to spend sums to prevent illness; sums which seem insignificant when compared to the endless cost of caring for its sick. In caring for its sick, one of the first duties, if not the first duty, of a community is to see that its hospitals fulfill their end, and it should construct them with as much interest and thought as it does its schools, court-houses and city halls. It is not worth while to build expensive schoolhouses if you have sickly children to send to school; and simpler and smaller court-houses would be needed if the health of the community were good, for there would be less crime, and, to go one step further, the greater the health of the community, the less the need of many hospitals. As I mentioned before, the hospitals of a community should be so built as to be attractive, not only to visitors, as that is of comparatively little importance, but also to the sick within their walls.

Too little attention has frequently been paid to certain of the most important parts of municipal hospitals. Not alone the wards but also the kitchen, laundry, boiler and electric-light plants should be hygienically constructed. Too often the kitchen is dirty, ill built and ill placed and entirely lacking in that attractiveness which it should possess. This is also true of the other departments mentioned. In the construction of the hospital it apparently has not been considered necessary to give these dependencies their proper attention, almost all of the money having been put into the wards; but even so, the ward lavatories and water-closets are seldom what they ought to be. They are too small and are usually ill ventilated. On the good planning of the kitchen, laundry, dining-rooms and other quarters for the help depends much of the success and efficient and economical administration of the hospital. The quarters for the nurses also should be airy and comfortable; the nurses should not be housed in overcrowded rooms, badly ventilated and heated. Without giving thought to all of these points and many others in the construction of municipal hospitals it is impossible to secure a first-class institution.

What hospital in this country has thought of disinfecting the water flowing from the necropsy-room, or still more, the waste water of the hospital? This is done in some of the newer institutions in Germany and should be done in all American hospitals if there is danger of the drinking-water of the community being polluted; and where in America does this danger not exist? So long as our drinking-water has to be filtered, it should not be lawful for a hospital to endanger it through contamination with its foul waste-water.

It seems to me very necessary to lay stress on these points, for I believe that municipal hospitals will in the near future become more and more important to the community. Private hospitals are too expensive to be founded and properly supported except by a few rich men, and our municipal hospitals should not rank in attractiveness and value behind private institutions, but should be at least equal to them. No satisfactory reason can be given why persons of all classes should not be willing to go to municipal hospitals for treatment, and this is not the case to-day. In a well-planned municipal hospital there should be graded accommodations for the rich, the middle class, and the poor. To-day the middle class receive in all our hospitals, both private and public, the worst accommodation. By that I mean that they must usually be treated in the public wards with the riff-raff of our cities, as they (the middle class) cannot afford to pay for private rooms. A municipal hospital could well afford to have suitable semiprivate rooms, into which the middle class could be received and in which they could be made comfortable without having their proper sense of modesty offended.

It would lead me too far to take up special municipal hospitals, such as those for the insane and those for consumptives, but the general principles I have touched on should apply to them, as well as to the hospitals for other forms of disease. We have happily advanced in our treatment of the insane, but in many parts of our country the conditions still existing in regard to the care of this unfortunate class are a disgrace and scandal, not alone to the immediate community, but also to the public at large, as demonstrating both woeful lack of knowledge on the part of the administrators and sometimes a criminal heartlessness.

It is the duty of us who know what reforms are needed to work harder to secure them, and this brings me to the point of how, after a hospital well suited to the needs of the community is once obtained, it can be properly and successfully administered.

The first essential in order to conduct a municipal hospital well is that all those connected officially with the institution should be men or women trained to fill the positions they hold, and that after they have been appointed their terms of office should be secure, so long as they remain competent and honest. Whether the superintendent should be a man or a woman, lay or professional, seems to me a question of no vital importance. For the larger municipal hospitals I think that, with rare exceptions, the best man that can be obtained is a well-trained physician who has business capacity; but there are laymen who make excellent administrators, and many women (nurses for the most part) who conduct the hospitals of which they are in charge with marked ability. A superintendent of this kind should be paid liberally. His services are worth anywhere from

$5,000 to $10,000 a year. He will, with his business knowledge, save the municipality so much annually as to make his salary seem paltry. The waste and extravagance of our municipal institutions is due largely to the fact that they are managed by both dishonest and incompetent administrators.

Your first question might well be, To whom is the superintendent to be responsible for his acts and expenditures? I reply to a board of trustees, appointed by the mayor or city council, or some municipal board. To indicate more clearly how this can be done, let me take as an example one of the largest municipal hospitals in this country—Bellevue and Allied Hospitals, New York. The mayor makes the appointments from nominations made to him by the Charities Organization Society, the Society of St. Vincent de Paul, and the United Hebrew Charities Organization. Some arrangement of this kind is necessary in a community like New York in order to safeguard the interests of all its citizens, who, as you will note, are represented by a Protestant, a Catholic and a Hebrew society. In most of our communities such an arrangement would not be necessary; but a similar, and, if possible, simpler system is advisable. The trustees should be about eight in number, for, if too numerous, they do not work well together, and, if too few, are often likely not to have the requisite judgment on matters that will come to them for decision. The trustees should, I believe, be laymen, although one physician may be admitted as a member of the board. They should be appointed from the leading citizens, men who have shown their ability in the handling of big business organizations. They should be elected for a period, say, of eight years, two being eliminated every two years and two new members appointed in their places. In this way the good government of the institution can best be assured. The two members whose term expires should not be reelected, except after a lapse of two years. Thus the development of a powerful clique is prevented. The board, having been appointed in this way, should be entirely free from all evil political influence. The trustees should be left entirely free to select the superintendent, who should be a man trained for the position; and once appointed by the board, his term should last indefinitely, under good behavior.

The board should serve in an advisory capacity, and to the superintendent should be left the real administration of the hospital, without any interference on the part of the trustees. He is responsible to them for the efficient and honest expenditure of the sums allowed to him, and his reports should be so minutely detailed that all purchases and expenditures can be readily controlled and approved. The superintendent should be absolutely free in selecting all his assistants, superintendent of nurses, matron, engineer, etc. But it is not worth while to go into the minutiae of these details here. I merely wish to impress on you that the board of trustees is an advisory board, and that the superintendent is, or should be, the true administrative head of the institution. He is responsible to the board, as they are in turn to the community.

Under a commission form of government the administration of the hospitals would be somewhat differently regulated, but it comes down to this in every instance, that the superintendent must be appointed for his ability, not for any political reason, and that he shall hold his office so long as he proves his efficiency. His term shall not depend in any instance on the varying phases of the municipality's political forces. To be an able superintendent, proficient in handling a big business organization, for that is what a municipal hospital is, a man must have special training, acquired only by service as an assistant administrator in various capacities in some large hospital. The position calls for the best men obtainable.

In this relationship it is well to call attention briefly to some of the values and defects of the civil service system. Appointments to many positions in a municipal hospital had best be made under civil service rules, but certain positions should be exempt, and these are the superintendent and any member of the medical staff or of the nursing staff. Clerks, orderlies, helpers, maids, etc., are best protected by being under civil service rules, for in this way they avoid all danger of being unjustly dismissed. The civil service system cannot by any examination select the best man for superintendent or the best nurse as head of the nursing staff. No examination can test honesty and executive ability or the other qualities which combined make a good executive officer. So for this reason, these higher positions should not be classified under the civil service system. No hospital can be administered well if the superintendent is selected by a written examination. To a superintendent, presupposedly honest and capable, elected by a board of trustees, can safely be left the appointment of his assistants to the higher positions. If it is thought well, such appointments can then be confirmed or ratified by the civil service board. This makes it impossible for the staff to suffer from the spoils system of any political party, and the fact that he has appointed his own aids, renders the superintendent able to accomplish far more than with men eligible possibly under civil service rules, but who have had no experience and have simply secured an appointment because they were bright enough to pass a not difficult examination.

To the board of trustees it remains to elect the medical staff. The board being composed of leading citizens will be readily able to secure the necessary information as to the best physicians and surgeons to compose the visiting staff, whose number should be controlled by the size and nature of the hospital. Their term of office should be until they have reached the age of 63 or 65, but they, like the superintendent, should be removable for cause.

The medical staff will form of itself the medical board, to meet with the superintendent at stated intervals, and through him to pass their recommendations to the board of trustees. The duties of the medical board are to look after the patients and their welfare. It has nothing to do with the business administration of the hospital.

The medical staff should receive suitable remuneration for their services from the municipality, which, in this way, can best secure the services of the best men. It should be a privilege and honor to be connected with a muncipal hospital, just as it is to be on the staff of a private hospital, and in a few noteworthy instances it is, for example, in Boston, with the Boston City Hospital. I feel convinced that municipal hospitals are in the near future to hold a more important position in the community life, because, as I have said before, private hospitals will be rarer on account of the immense endowment required to support one properly. Hospitals are as necessary to the community as school-houses, and the community should recognize its own duties in supplying its citizens with proper places in which to be cared for when ill or injured. With state universities and state medical schools there must follow as a natural consequence state hospitals, and the administration of these should be as free from "politics" as is the management of our best state universities.

An administration of the kind that I have hastily sketched will secure for our municipalities institutions as ably administered as are our best private hospitals.

Before closing I wish to draw your attention to one point that I shall not discuss at length, for it is an unpleasant one, but one that ought not to be overlooked in our consideration of the present status of our municipal hospitals. Their culpable inefficiency and their inexcusable deficiency in serving the community is in a large measure due to the medical profession. The best physicians have not, up to the present time, generally shown any interest in these hospitals or attempted to make them better. This is partly due to indifference to the public welfare, and partly to the desire to make money, to state it bluntly. Fortunately our indifference to the public welfare is decreasing, but we waste much time in our societies discussing trivialities as to medical ethics, etc., when we had much better be out "doing," forgetting our own little interests in fighting hand in hand with others to aid those who most need our help. Our doctors have often feared to battle for better conditions lest they might lose their positions on the staffs of municipal hospitals, and have lowered themselves to do what the political "boss" told them to do. This is a disgraceful condition of affairs. It exists throughout the country. If the profession will get together and will speak out forcibly for what they know is right and necessary, they will have the people behind them and be able to secure many needed reforms. There is not the least doubt, and it is a reflection on us as medical men, that many of the movements for social reforms which have been and are being accomplished to-day, have not been inaugurated by physicians, but by laymen and by laywomen. We have followed where we should have led.

As you will see, it has been impossible for me to do more than touch on the various points under consideration, and it has been necessary to leave much unsaid. I can only hope to have brought something new and of interest to your attention. The relation of our municipal hospitals to the community is a most important one—one that deserves deep study by all of us.

The Johns Hopkins Hospital.

ECHINOCOCCUS CYST OF THE PANCREAS

REMOVAL AND RECOVERY

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I find a twofold reason for reporting this case: first, on account of the great rarity of the condition, and, secondly, on account of the most unusual history and probable mode of infection.

An idea of the incidence of this disease affecting the pancreas may be gained from a brief review of the literature on the subject. Bergmann[1] dismisses the subject with the statement that "echinococcus cysts of the pancreas have been mentioned, but they occur with great rarity." In Keen[2] is found the following: "Hydatid cysts of the pancreas are extremely rare. Masseron was able to collect the records of only five cases. These were first recognized on the post-mortem table. Graham of Sydney writes: 'The hydatid is sometimes found in the pancreas. I have observed it as a cyst about 3 inches in diameter replacing the head of the organ.' Tricomi states, without giving references, that 'seven cases have been recorded.'"

So it may be stated that heretofore the condition has been observed seven times and that at least five of these were found on the post-mortem table, and there was no reference made concerning the other two cases.

V. S., Colon Hospital, No. 47289, a large muscular Russian, aged 35, on Isthmus seven years, came into my outside clinic, June 1, 1913, and gave a characteristic history of duodenal ulcer. The symptoms dated back for a period of nearly seven years. He was admitted to the ward on the same day and carefully observed and examined on two succeeding days. The examination elicited absolutely nothing other than the symptoms of duodenal ulcer. No tumor mass or abnormality could be palpated except a point of tenderness over the duodenum.

June 4, 1913, I operated on him for ulcer and found a comparatively large and thickened ulcer of the duodenum, the inflammatory reaction of which had extended to the peritoneal coat and caused omental adhesions at its most prominent part.

In making a casual examination of the abdomen preliminary to performing a gastrojejunostomy, I felt a cystic tumor mass, oval in shape, about 2½ inches by 3 inches, just to the left of the median line, and bulging the gastrohepatic omentum just above the lesser curvature of the stomach. Careful palpation through a hole cut in the gastrohepatic omentum revealed the mass to be situated in the upper part of the body of the pancreas and extending from near the head to the tail of the organ.

Carefully walling off the surrounding structures with gauze, I opened the cyst and evacuated its contents little by little into a large gall-stone spoon. The cyst had a very thick wall and contained a thick, creamy material, not at all similar to the clear, gelatinous material usually found in echinococcus cysts. There were no daughter cysts, either exogenous or endogenous. The cyst wall came away without any trouble and was thick, grayish, translucent, gelatinous in appearance and quite characteristic of echinococcus cysts.

Dr. S. T. Darling, chief of the board of health laboratory, and Dr. H. C. Clark, pathologist, both of Ancon, demonstrated many characteristic hooklets in the cyst wall. The cyst was surrounded by a brownish débris of putty-like consistency, which showed microscopically much cellular necrosis and degeneration, and many cholesterin crystals. The appearance suggested pancreatic digestion on the cyst wall.

The cavity was lightly curetted and packed with a narrow strip of iodoform gauze, the end of which was brought out at the upper angle of the incision through a large rubber tube. The rubber tube was stitched both to the edges of the cavity and to the skin, providing a channel through which the gauze could be removed and the cavity repacked until it closed up entirely.

For the benefit of the duodenal ulcer an ordinary no-loop posterior gastrojejunosotomy was performed by suture.

A moderate amount of cellular débris came out with the packing for about ten days. The tube was withdrawn and the patient's recovery was uneventful, except for a slight pancreatic fistula which persisted for five weeks.

During his convalescence, I gained from him the following history. He was born in Odessa, Russia, thirty-five years ago. For two years he was robust and healthy; then he sickened and had a disease known as "dedor" (marasmus?) According to the practice of that country then, it was customary to treat children suffering from this ailment by taking them to the abbatoir, stripping them and burying or covering them all over except the face with the entrails of slaughtered animals, or the stomachs were cut open and the patients covered with fresh tripe. The treatment was repeated daily, and this was the treatment given the patient, repeated daily for many days.

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[1] Bergmann: System of Surgery.

[2] Keen: Surgery, iii.

During his childhood and manhood he has been singularly free from contact with the lower animals that might bring him infection. At an early age he was apprenticed to a machinist. He left Russia when he was 18, and since that time has never been in any part of the world in which echinococcus disease was endemic. He is a man of more than ordinary intelligence, cleanly and careful in his personal habits and able to give a clear and concise account of his life and mode of living. It is improbable that he contracted the infection through any carelessness or ignorance on his part.

This brings us to the consideration of the probable time and manner of infection in this case. For the past seventeen years—since leaving Russia—he has led a cleanly life in a part of the world where echinococcus disease is very rare if not entirely unknown. Consequently, I believe we may infer that the chance of his infection during the past seventeen years was very slight.

Concerning the first eighteen years of his life, conditions were somewhat different. He lived in a country where echinococcus disease occurs and we must admit the possibility of infection taking place at any time; yet he gives a history of his earlier years that would seem to make the likelihood of infection slight. His home had no domestic pets, he never played with cats, dogs, sheep or other domestic animals that might transmit the infection, while his trade, that of a machinist, had a tendency to keep him away from the most common sources of infection.

So we are brought again to consider the chances of infection at the age of 2 years when he was buried repeatedly in the entrails of slaughtered animals, and probably beyond a doubt some of them were of cattle or sheep suffering from hydatid disease. The exceedingly close contact with infection which would be brought about by this treatment would seem to make infection not only possible, but probable. Infection probably occurred by ingestion of the ovum and direct migration of the ovum through the wall of the stomach into the pancreas, where it began to develop.

By the appearance of the cyst I would say it had probably been dead for a long time, perhaps a number of years. While the duration of this cyst is merely a matter of conjecture, the history and circumstances are such that one may say there could well be no stronger evidence to a duration of thirty-three years.

The cyst was in a position in which palpation was impossible and percussion would reveal nothing. As it did not interfere with the function of at least part of the pancreas, I believe that it gave rise to no symptoms which might even lead us to suspect the trouble and would be found only on the operating-table or at necropsy.

I wish to thank Colonel W. C. Gorgas for permission to publish this paper.

Hexamethylenamin Used to Preserve Caviar.—Our vice-consul at Moscow writes that the authorities have been petitioned by the Astrakhan Chamber of Commerce to sanction the use of hexamethylenamin as a preservative of caviar until a more satisfactory preparation is found. Of about 1,400,000 pounds of caviar obtained each year by the Astrakhan fisheries, approximately 75 per cent. is exported, and the only preservative thus far found which will keep the caviar fresh is hexamethylenamin. This substance is added to the caviar in the proportion of 1:1300 and therefore, it is claimed, is not present in amounts sufficient to be injurious to health. Approximately 100 pounds of hexamethylenamin are used for this purpose annually.—(*Consular Reports*, Nov. 6, 1913.)

A NEW OPERATIVE TREATMENT FOR SPASTIC PARALYSIS

PRELIMINARY REPORT

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AND
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The purpose of this article is to offer a new operative treatment in selected cases of spastic paralysis. We have now a series of only twelve cases to report, but the results have been so gratifying and even startling, that we feel justified in making a report of the work that has been done up to the present time. We do not assert that the improvement in all of our cases will be a permanent one (sufficient time has not yet elapsed since the operations), and yet we do not see why the improvement should not continue to be more and more marked as the children grow older.

Spastic paralysis is a condition which frequently results from a lesion of the brain occurring before birth, during birth or shortly after birth. It is characterized by more or less complete paralysis of the part affected, and is associated with a stiffness or spasticity depending on the extent of the involvement of the pyramidal tract; this hypertonicity produces muscular contractures and deformities, usually flexor in type, with a corresponding overstretching of the opposing muscular groups, usually the extensors. In mild cases, however, the spasticity may be so slight as to cause little or no deformity, but merely an awkwardness of the part affected. Frequently athetoid movements of the arms and legs may be observed, and epileptiform attacks, commonly of the Jacksonian type, may occur.

In a large percentage of cases as the child grows older, not only do the spasticity and its resulting contractures increase, but also the mentality of the child becomes impaired, and this mental impairment continues until the child may be considered a defective, or still further an imbecile, and only too frequently an idiot.

The most common lesion of the brain producing spastic paralysis is that of intracranial hemorrhage of the new-born. It is usually due to a rupture and tear of either the longitudinal sinus or of its venous tributaries, and of vessels overlying the cortex of the brain, causing a hemorrhagic clot to form over the cerebral cortex. According to the extent and pressure of this hemorrhage over the cerebral cortex, we find clinically the signs of such interference of the pyramidal tract—a spastic diplegia, paraplegia, hemiplegia and the milder forms of spastic paralysis. These lesions form 70 per cent. of the cases of spastic paralysis, whereas agenesis and maldevelopment of the cerebral cortex and the cases of meningo-encephalitis complicating measles and scarlet fever constitute most of the remaining 30 per cent.

The operations which have been used in the past and are still being used to improve the conditions of spastic paralysis, namely, tenotomies, tendon lengthenings, sections of the posterior nerve roots, alcohol injections of peripheral nerves, nerve resections and other operations, are, in our opinion, of only temporary benefit, and we have yet to see a case in which the spasticity has not returned, in some degree, within one year. In all of our cases treated by the operations just mentioned during the past two and one-half years, the spasticity began to reappear within one year after operation.

Tenotomies, besides being unsurgical, are unsatisfactory. Tendon lengthenings (Hibbs' operation) alone are satisfactory in only very mild cases. Foerster's operation for sectioning of the posterior nerve roots of the spinal cord is advocated merely to lessen the irritability and the instability of the cortex of the brain by decreasing the number of afferent stimuli reaching the brain through the posterior nerve roots of the spinal cord and also to affect the reflex mechanism of the spinal cord. Besides being a rather formidable and long operation for a child, the lessening of the spasticity is only temporary, few cases being reported improved longer than one year. Our experience with seven cases has been the same. The injection of alcohol into the peripheral nerves (the Allison and Schwab operation) produces immediate paralysis and a temporary relief from spasticity; in our experience of thirty-one cases, however, the spasticity has returned within one year. With nerve resections (Stoffell's operation), we have had no experience. These operations, however, do not in any way "get at" the primary cause of the spastic paralysis, namely, the lesion of the brain, but are merely peripheral operations to relieve the spasticity temporarily, in the hope that, before the recurrence of the spasticity, sufficient power will have returned to the opposing muscular groups to reestablish the muscle balance. Little, if anything, has been done to improve permanently the condition of spastic paralysis, and we offer our observations in the hope that they may lead to a more satisfactory solution of the treatment of these pitiful cases. Our attention was first centered on the importance of relieving the increased intracranial pressure as a means of lessening the spasticity and improving the mentality of these children, by a decompression operation performed by one of us.

REPORT OF CASES

CASE 1.—The patient, a child, aged 9, with a left spastic hemiplegia of the flexor type, was moribund at the time of operation, having been in status epilepticus for three days, with little or no nourishment. Artificial respiration and oxygen were being used. The intracranial pressure was very high as shown by an ophthalmoscopic examination and by the signs of medullary compression, and therefore a decompression was performed in the hope that a lowering of the intracranial pressure would afford the child its only opportunity to recover. The usual incision was made. The dura was very tense, and when it was incised, cerebrospinal fluid spurted to a height of 4 inches. Signs of an old cortical hemorrhage were found, and 2 cm. above the upper bony margin of the decompression opening was a rather hard, fibrous tumor, the size of an English walnut. As the condition of the child was precarious, it was thought wiser to remove the tumor at a subsequent operation. The child made an excellent recovery; the spasticity, however, lessened to such a degree that he can walk now with only a slight limp, the heel touching the floor; the left arm and the left hand are now being used for the first time in his life. The after-treatment is being carried out now with the cooperation of the child—something impossible before operation. As the child has improved so much, the parents have not yet consented to the second operation for removal of the tumor.

CASE 2.—The patient, a child of 13, with a history typical of intracranial hemorrhage of the new-born, was a spastic hemiplegic, and on ophthalmoscopic examination, signs of intracranial pressure were observed. Remembering the improvement of the preceding case following a mere decompression operation, we advised and obtained consent for the operation merely to relieve the intracranial pressure in the hope that the spasticity would be lessened and the mentality improved. Similar improvement followed as in the preceding case, although a lengthening of the Achilles tendon was deemed advisable and it was performed the following week.

Since then we have performed the decompression operation in twelve selected cases in all and practically the same improvement has resulted in each case. We have selected for operation only the extreme types of spastic cases.

METHOD OF PROCEDURE

In those cases of spastic paralysis of the hemiplegic, paraplegic or diplegic type, with a definite history of difficult labor with or without the use of instruments, in which, on ophthalmoscopic examination, signs of intracranial pressure are shown in the dilated retinal veins and a blurring and haziness of the optic disks, especially of their nasal halves, a large right subtemporal decompression is performed to relieve the intracranial pressure. If the intracranial pressure is extremely high and remains high after operation, a left subtemporal decompression is performed the following month, the operative recovery requiring only a week to ten days.

The method of dealing with the various pathologic lesions found at operation will be discussed in detail in the more complete report to be published later. The usual findings are definite cystic formations resulting from a cortical hemorrhage occurring at birth. The decompression operation is performed merely to offset the effects of the pressure of this hemorrhage with cystic formation, and the resulting spasticity and mental impairment.

The after-treatment consists in the correction of deformities by tendon lengthenings or stretchings of the contracted muscles, the maintenance of corrected positions through the employment of especially adapted and properly fitting braces, and skilled massage in conjunction with short applications of galvanism and faradism, particular attention being given to the weakened and overstretched muscle groups. A careful, systematic course in muscle training is carried on daily.

The improvement in our cases selected for operation has been so marked—not only a lessening of the spasticity, but a definite amelioration of the mental condition of the patient—that we believe a cranial decompression is indicated in those cases of spastic paralysis showing intracranial pressure by the ophthalmoscopic examination; of those cases of spastic paralysis which we have examined, about 60 per cent. have shown signs of intracranial pressure, and are, therefore, in our opinion, cases that can be very much improved. This operation is not a formidable procedure for one trained in neurologic surgery; all of our patients have improved and we have had no deaths. The anesthetic should be administered by an expert.

One of the most important advantages of this operation is that the child improves mentally to such a degree that we obtain the cooperation of the patient in the carrying out of the after-treatment.

Naturally, we do not believe that all cases of spastic paralysis should have a cranial decompression; in some mild cases, tendon lengthenings alone are sufficient, and this is especially true in the absence of mental impairment. But those selected cases of spastic paralysis, particularly of the hemiplegic and of the paraplegic types, which show signs of increased intracranial pressure by an ophthalmoscopic examination, are the cases that can be very much improved by such a procedure. The cases of agenesis and maldevelopment of the cortex of course cannot and do not show signs of increased intracranial pressure, and are therefore easily excluded by an ophthalmoscopic examination.

A more complete report will be published later.

20 West Fiftieth Street—104 East Fortieth Street.

IMPROVED TECHNIC FOR BLOOD-COUNTS: RAPID METHOD FOR SECURING EXACT AMOUNT OF SUSPENSION

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Many clinicians regard total white or red counts as an arduous and lengthy procedure. After noticing that most of their time has been consumed in trying to drop the exact amount of suspension on the counting-chamber, I feel justified in calling attention to the technic which I have found for many years both rapid and exact. It may be original or I may have observed some one else doing the same thing, but so far as I know it is original, and none of the text-books on laboratory technic covers the point in question, being content to say: "A small drop of the solution (?) is carefully placed on the center of the counting-chamber, that is, over the ruled scale. The cover-glass is immediately adjusted before the corpuscles can sink, and pressed down at the margin until Newton's rings appear. If these do not remain after removal of the pressure, the preparation *must be made over again.*"

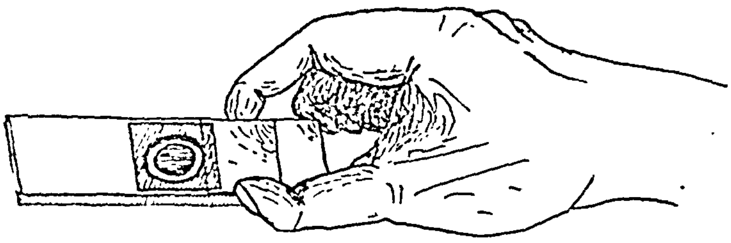

Fig. 1.—Manner of holding cover-glass.

I have observed some clinicians make as many as five or six preparations before obtaining satisfactory results, which can be readily obviated in a single preparation by adhering to the following technic:

After the usual shaking of the pipet, and expulsion of a few drops of the suspension, a good sized drop is placed on the counting-chamber, no particular attention being paid to its size. The cover-glass, which has been previously cleaned, is then rapidly grasped between the thumb and index-finger of the right hand (Fig. 1 and Fig. 2*A*), while the slide is steadied on the table with the left hand. While firm pressure is exerted on the cover-glass it is rapidly slid across the counting-chamber, through the drop of suspension on it. The cover-glass will cut through the drop at exactly *0.1 mm.* The excess from the drop will rise on top of the cover-glass and jump across the moat (Fig. 2*B*). Newton's rings will be obtained in each instance. The drop on top of the edge of the cover-glass is wiped or soaked up with the point of a towel or blotting-paper and the preparation is completed.

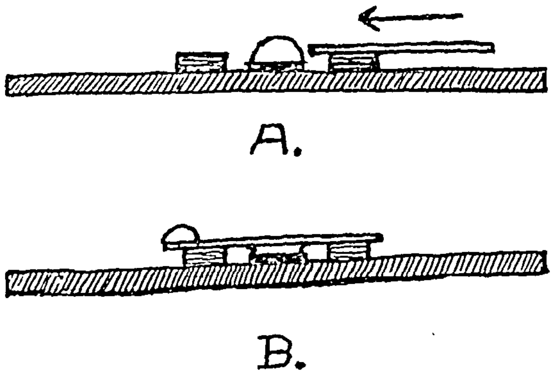

Fig. 2.—Horizontal view of counting-chamber, drop of suspension and cover-glass; *A*, before sliding cover-glass through drop. *B*, after sliding cover-glass through drop.

Precautions to be observed are:

1. Clean cover-glass.
2. Perfectly dry moat.
3. Rapid and perfectly horizontal motion of the cover-glass.

108 Baronne Street.

Therapeutics

PUERPERAL INFECTION

(Concluded from page 1901)

TREATMENT OF PUERPERAL INFECTION

If some form of puerperal infection has occurred, of course the first decision is as to whether or not it is local or general. In a local or pelvic disturbance with more or less rise of temperature but without any symptoms of general infection, the treatment should be conservative and more or less symptomatic. The bowels should be carefully attended to, the diet should be simple but sufficient, large amounts of water should be drunk to dilute all the secretions, and Fowler's position should be used more or less continuously to encourage drainage. Again, vaginal douches generally should not be given.

It has been shown that the action of yeast increases leukocytosis and more or less inhibits intestinal intoxication; therefore its administration is good treatment in most infections and is very valuable in pelvic infections. From one-sixth to one-fourth of an ordinary compressed yeast-cake, dissolved in a glass of water, should be given three times a day, unless it causes too much looseness of the bowels. Vaginal douches of yeast solutions have been used and are said to be of value.

Of course the vaginal discharge, or, better, the uterine secretion directly obtained, should be studied bacteriologically to decide, if possible, what infection is present. According to Watkins,[1] the bacteriologic examination of vaginal and uterine secretions is of relatively small value, as the results are often uncertain and misleading. Blood-cultures are the only means at present of accurate diagnosis of the variety of infection. The result of this examination may suggest the use of an antiserum or a vaccine, if either be deemed advisable. The blood should also be examined for pathogenic bacteria.

If a parturient patient has a sudden chill more or less severe, with a rapid rise of temperature which persists in some degree and is not intermittent, and a rapid pulse, puerperal infection has probably developed, unless some serious condition like pneumonia is about to occur. Other symptoms of this general streptococcic infection are: a diminished amount of lochial discharge, perhaps even without odor; more or less tenderness in the pelvic region; a coated and perhaps dry tongue; bad, perhaps septic, breath; scanty urine; severe lumbar pains; tympanites; at times yellowing of the skin, and later, if the infection progresses and becomes serious, possibly delirium. The progress of the fever is that of a typical septicemia. There may be irregular chills, profuse sweatings and more or less leukocytosis. If the lungs, breasts, kidneys and throat have been excluded as the location of the cause of the temperature rise and onset of symptoms, and if the uterus is tender and enlarged, as it generally is, acute puerperal streptococci infection is in evidence.

The insistence here should be on *the fact that because* there is a septic puerperal infection, it is not forthwith an indication for a uterine curettage, or intrauterine or vaginal douching or any other severe operation. The general treatment just outlined for a more localized simple puerperal pelvic infection should be carried out, with more or less tepid spongings to control the high temperature. The bowels should be freely moved each day, large amounts of water should be drunk and perspiration should be encouraged, though the body should be kept clean by frequent warm spongings and alcohol spongings. The outdoor treatment in Watkins' opinion[1] is the most valuable remedy known as yet in the treatment of puerperal infection. The beneficial effects of that treatment in his cases have been very noticeable, especially as regards improvement in appetite, sleep, temperature and pulse.

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[1] Watkins, T. J.: Puerperal Infection, Am. Jour. Obst. and Dis. Women and Child., September, 1913; abstr., The Journal A. M. A., Oct. 18, 1913, p. 1485.

The heart may be stimulated by infrequent doses of strychnin, not more than 1/30 grain once in six hours, with caffein (perhaps best as coffee) twice in twenty-four hours, if no delirium is present. Camphor is another valuable cardiac and nervous stimulant and 20 or 30 drops of the official spirit of camphor, given properly diluted once in four to six hours, is good treatment in these cases. In emergencies, one, two or three injections of a sterile ampule of camphor solution in oil hypodermically at intervals of an hour will, at times, tide over cardiac depression. Alcohol may or may not be indicated, depending on whether or not the patient can take other nourishment. It should not be used as a stimulant, and the dose should not be large. Whether ergot or hydrastinin should be given must be decided in each case. The ergot will improve the tone of the circulation, but may cause the uterus to contract more than is desirable. Digitalis should not be used except, perhaps, early in the disease, as the inflamed or injured myocardium which results from an infection must not be hurt by the strong contractions which are caused by this drug.

Fowler's position should be maintained to promote drainage, often with the use of uterine retention tubes, and the Murphy drip may be advisable.

The diagnosis of a streptococcic infection having been made, the choice of one or more of the following specific treatments are available:

1. Antistreptococcic serum.
2. A stock streptococcic vaccine.
3. An autogenous vaccine developed from the uterine secretion.

Antistreptococcic serum has in some hands shown wonderful results; in other hands it has failed. It should be used, if at all, in large doses, as it does not seem to do any harm. It often, however, is not at all antitoxic to the bacterial infection from which the patient is suffering.

If vaccines or bacterins are to be used, they should be used early, and the stock vaccine selected must be polyvalent, that is, it must represent several strains of streptococcus, with the hope that one of them will be the one that has infected the patient. Later, these vaccines are not valuable, as then enough of such stimulation is going on in the patient. Therefore, in the advanced or later stages of the infection an antistreptococcic serum, if it were antitoxic to the germ from which the patient is suffering, would be of great value.

If an autogenous vaccine is to be used, it should be produced early in the infection (such a bacterin, in emergencies, can be developed in from eighteen to twenty-four hours) and immediately given. More than one or two repetitions of such an autogenous vaccine at twenty-four-hour intervals would be doubtful therapy, as in an acute infection such as puerperal septicemia the blood is soon producing all of the antibodies that it can. This is a very different process from a slow-going acute or chronic infection in which revaccinations are often of great value.

As these infections are not malarial, unless a malarial germ is discovered in the blood, there is no excuse for administering quinin. If the diet is without meat, iron should be given, and is, perhaps, best administered in 5-drop doses of the tincture of ferric chlorid in fresh lemonade, given three or four times in twenty-four hours. Also the need of the body for lime should not be forgotten and simple lime-water may be used, or calcium glycerophosphate, in powder, in 0.3 gm. (5 grain) doses, three times daily.

If more or less serious uterine hemorrhage occurs, or if the discharges from the vagina are exceedingly fetid, showing decomposition products in the uterus, it may be necessary to institute some operative interference. Perhaps the safest procedure is to administer an anesthetic and to explore and clean the uterus with the finger properly protected. Curettage of an infected uterus is serious and may cause serious results, to say nothing of the danger of perforating the softened uterine wall. It may be repeated that except for serious hemorrhage it is probably rarely advisable to clean out the uterus during septic infection. Decomposition will generally cause a loosening of foreign and pathologic tissues from the walls of the uterus, and they will generally be passed out through the vagina. Also, it should be remembered that in this septic infection the uterine muscle itself is more or less inflamed and softened, and contains, as well as the surrounding lymphatics, more or less of the infecting germ. Also, when the infection is well in progress the bacteria are probably in the blood. Severe local measures, therefore, do not eradicate the disease and may open up other avenues of absorption. It may even be wise, in the presence of uterine hemorrhage, to pack the vagina first to see if the loosening membrane or piece of placenta will come away without actual uterine interference.

It should be urged that intra-uterine injections and douches are rarely, if ever, indicated, are generally dangerous and may do serious harm. Vaginal douches in septic infection, while not so dangerous, may also cause harm and should generally be omitted. In other words, the pressure in the uterine and vaginal cavity should always be negative to the pressure on the other side of the blood-vessels and lymph-vessels to promote exudation into the parturient canal rather than absorption from this canal. There is danger, also, in intra-uterine injections of forcing septic matter into the fallopian tubes. If, later, a pelvic mass is found, whether hematoma or abscess, hot vaginal douches may be allowable and of value in promoting absorption or in hastening localization for vaginal incision and evacuation.

If there is more or less peritoneal inflammation and, therefore, pain, morphin is indicated, as a patient should not be allowed to suffer pain, for depression from acute pain may be the last straw to stop an already weakened heart. Local applications to the lower part of the abdomen in the shape of turpentine stupes or alcohol fomentations may sometimes be of value as counterirritants. Warm applications, as flaxseed poultices, may give some comfort and prevent the necessity of giving much morphin. They often cause a relaxation of the muscular tissues and lessen the irritation and tension. Of course such treatmeint is purely symptomatic and entirely non-specific. If serious infective localization occurs in the pelvis, more serious operative interference may be necessary.

In recovery from this very dangerous infection the convalescence is long and tedious, and months generally elapse before there is a return to normal health.

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SATURDAY, NOVEMBER 29, 1913

THE REINSPIRATION OF EXPIRED AIR

It is evident to the most superficial observer that under ordinary conditions of breathing some of the expired air must be drawn back again into the lungs. A few experiments to determine the proportion of the breath that is reinspired have been made during the last fifteen years, but no really thorough study of the question was carried out until the recent work of Crowder.[1] This investigator has studied by ingenious methods the effect of such factors as change of position, body motion, different types of breathing and different temperatures, and in addition has determined the conditions that obtain on the sleeping-porch and in the open air. Nasal breathing is the type especially studied; in mouth-breathing there is little or no reinspiration.

The conclusions that may fairly be drawn from Crowder's work are that (1) a person remaining quiet and indoors will immediately rebreathe from 1 to 2 per cent. of his own expired air; (2) when lying in bed the percentage is higher, rising to from 4 to 10 per cent., depending on the position assumed while sleeping. "Nor does sleeping in the open insure pure air for breathing. The same influences here produce the same relative results that they do inside. When one buries his head between pillow and bedclothes for the sake of warmth, reinspiration is inevitable, and it is not necessarily small in amount." In addition, it must be noted that at each inspiration we reinhale not only some of the air just exhaled, but also the air contained in the nose and larger bronchi — the so-called "dead-space" air. This may amount to one-third of the whole volume in quiet inspiration and not less than one-tenth in deep breathing.

The significance of this study in connection with questions of ventilation is obvious. Since even under the most favorable conditions we cannot avoid drawing back into the lungs some of the air that has just passed out of them, not much importance can be attached to the slight variations in carbon dioxid content which occur in the air of rooms. A little deeper breathing seems to be the utmost physiologic effect that could be caused. These experiments also furnish additional evidence against the theory that efficient ventilation consists in the chemical purity of the air, in its freedom from "a toxic organic substance." Even were a poisonous protein substance present in the expired air—a fact no experimenter has yet been able to demonstrate—the human organism under every-day conditions is apparently well able to adjust itself to the reinhalation of this hypothetic substance, since a considerable quantity of the expired air is always taken back into the lungs.

The failure of many expensive ventilation systems to confer the comfort expected from them has been due to neglect of such facts as those here cited. The attempts to "renew" the air by displacing a certain volume at regular intervals were primarily based on the theory that good ventilation was due to freedom from the chemical constituents of expired air. We now know that this practice did not achieve the end aimed at, because the essential factors in good ventilation are not freedom from carbon dioxid or from a mythical organic poison, but are coolness, dryness and motion. Crowder's work brings the old and new theories of ventilation into sharp contrast. "The theory of displacement does not sufficiently take into consideration that all animals possessing lungs ventilate them on a very simple principle of dilution; nor does the pure air theory sufficiently consider that the air of the lungs always remains highly contaminated with their own excretory gases, and that there is such an effective barrier as the dead space against the lowering of the contamination."

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[1] Crowder, Thomas R.: The Reinspiration of Expired Air, Arch. Int. Med., October, 1913, p. 420.

ACIDOSIS AND METABOLISM IN DIABETES

In the course of their elaborate studies on metabolism in diabetes, carried out at Boston in the Nutrition Laboratory belonging to the Carnegie Institution of Washington, Benedict and Joslin[1] have reached the significant conclusion that the exchange of matter and energy is distinctly augmented in the course of this disease. This heightened metabolism is not attributable to psychic influences, excessive muscular exertion or increased protein decomposition. Contributory causes like fever and the factors just mentioned were carefully excluded. The tendency toward increase in metabolic exchange appears to parallel the alteration in the intensity of the diabetes.

Acidosis and the attendant production of the compounds leading to ketonuria are a characteristic of the severer types of diabetes. It seems not unreasonable therefore to connect the acidosis with the simultaneously augmented metabolism. Ketonuria can readily be induced in perfectly healthy subjects by the complete withdrawal of carbohydrate from the diet and likewise by starvation. It is only logical, therefore, to ascertain the effect on the metabolism in normal man of an acidosis thus artificially induced. New experiments conducted likewise in the Nutrition Laboratory at Boston[2] have given clear-cut evidence of the stimulation induced in this way.

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[1] Benedict, F. G., and Joslin, E. P.: Metabolism in Diabetes, Publications of the Carnegie Inst. of Washington, No. 135; A Study of Metabolism in Severe Diabetes, ibid., No. 176.

In the experiments here referred to the quantities of beta-hydroxybutyric acid found in the excreta during the period of increased metabolism did not exceed 5 gm. per day. This is far outdone by diabetics, who may show an output of more than 50 gm. with no greater rise in the metabolism than the normal subjects showed in the presence of the smaller amount of acidosis products. It is therefore conceivable, as Benedict and Joslin point out, that the continued production and presence of beta-hydroxybutyric acid as it must occur in the organism of the diabetic develops a degree of tolerance to its specific metabolism-stimulating effect. Whether the latter is in reality a direct action of the circulating acid on the tissue-cells or is due to the diminished alkalinity of the blood remains to be learned. In fact, for the present one is not justified in going beyond the demonstration of the usual simultaneous manifestation of acidosis and heightened metabolism, for in cases of prolonged starvation it has been missed.

In accord with clinical experience the Boston investigators offer the significant reminder that an acidosis of moderate intensity induced by the sudden withdrawal of carbohydrates is more dangerous than a decidedly more severe acidosis attending the more gradual initiation of a carbohydrate-free regimen. The sudden withholding of carbohydrates, which is liable to occur when a diabetic patient enters a hospital or has a change of physicians, may precipitate an acute onset of coma. It is surprising, we are told, how small may be the urinary output of organic acids in such cases. On the other hand, patients with severe diabetes who have been subjected to a strict non-carbohydrate diet for long periods may manifest an acidosis involving 50 gm. of beta-oxybutyric acid in the daily urine without any disturbances directly associated therewith. The sudden complete withdrawal of carbohydrates is always a questionable procedure in diet regulation.

THE PULSE-RATE DURING SLEEP

The extensive records obtained in the course of the past few years at the Boston Nutrition Laboratory of the Carnegie Institution of Washington have made it evident that there is a close and almost direct relationship in both man and animals between the pulse-rate and total metabolism. If this is true it becomes apparent that under normal circumstances the pulse-rate may be a sort of index of the extent of the chemical changes taking place in the body. Every one realizes from personal experience that muscular movements, which, of course, occasion an increase in metabolism to liberate the energy essential for their performance, are attended with a more rapid heart-beat, the rate varying with the intensity of the exercise performed. The published observations available show, however, that this response of the pulse is more perfect than might be suspected. Not only the more vigorous activities but even unsuspected ones exert detectable influence on the pulse-rate. We recall, for example, the records of Benedict and Talbot[1] on nursing infants. The relationship between carbon dioxid production, pulse-rate and the muscular movements of infants as recorded by graphic methods was very striking. In comparing the pulse of infants of different ages, for instance, a very young baby and an older one, it was noted that there is much less stability of the young babies' pulses than those of the older ones, and a slight motion causes more marked elevation of the pulse. The minimum average pulse-rate depends on the age and type of the baby, and no general rules can be made, because each baby is a law unto itself. The average of the babies in the first week of life was 120 beats per minute and that of the older babies somewhat slower. The average minimum of one baby 3 months old was about 90 beats per minute, and that of another baby of 3 months 100 per minute. Slight movements which were visible practically always elevated the pulse-rate from ten to twenty beats, while violent exercise, such as nursing or crying, increased the pulse-rate from fifty to sixty beats. When the pulse was increased for twenty minutes, as it was during a nursing, it took about ten minutes after the exercise was finished for the pulse-rate to reach the normal. Sometimes it dropped below normal after continued exercise, and remained there for from three to five minutes. The pulse, therefore, did not reach the normal line in some instances until fifteen minutes after the muscular exercise was finished.

The interpretation of the pulse-rate in relation to metabolism at once suggests the bearing of this factor in the daily routine of adult man. No clinical observations are more frequently repeated than those on the pulse-rate, a symptom which every physician continually makes use of at all times of the day. There are, nevertheless, few statistics available respecting the pulse in sleep, a period when muscular activity and metabolism are at a low ebb. Data on this subject have been obtained by Dr. Klewitz in Moritz' clinic at Cologne.[2] The average pulse-rate of persons free from heart defects was fifty-nine per minute during sleep and seventy-four when awake, the subjects in either case being at rest in bed. The variations in the pulse-rate are far less marked than during waking rest. That the lowering of the pulse-rate during sleep is in truth merely the expression of a more decided condition of perfect restfulness is evidenced by the fact that even during waking hours figures as low as those noted in sleep could be observed, provided the degree of rest was as perfect as can be maintained by a person awake. During sleep in the daytime the pulse-rate is scarcely decreased below that which obtains at rest in waking hours.

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[2] Benedict, F. G., and Joslin, E. P.: Ueber den Stoff- und Energieumsatz bei Diabetes, Deutsch. Arch. f. klin. Med., 1913, cxi, 333.

[1] Benedict, F. G., and Talbot, F. B.: Some Fundamental Principles in Studying Infant Metabolism, Am. Jour. Dis. Child., September, 1912, p. 129.

[2] Klewitz, F.: Der Puls im Schlaf, Deutsch. Arch. f. klin. Med., 1913, cxii, 38.

From a clinical point of view it is interesting to note that the conditions just recited also exist in patients with valvular defects in whom the cardiac deficiency has become compensated; but when the latter is not the case the pulse-rate is not so characteristically decreased in sleep. The extent of the decrease in the heart-rate is in a way indicative of the degree of compensatory changes which has been established, so that the comparison of the pulse-rate in sleep and in waking hours may have some prognostic value. Irregularities of the heart, such as extrasystoles, etc., do not disappear in sleep. Tachycardia due to organic defects is likewise not obliterated by sleep; but when the accelerated heart-rate is associated with purely nervous causes, the tachycardia disappears in sleep. Here again the determination of the pulse-rate may furnish a help in differential diagnosis.

THE CONSEQUENCES OF INTESTINAL OBSTRUCTION

The occasion of the severe symptoms and frequently fatal outcome of high intestinal obstruction and the cause of death from volvulus have of late attracted unusual attention from surgeons and other investigators. Certain facts seem clearly established. High loop obstruction in animals, for example, may cause very rapid death, in from twenty-four to sixty hours, as a rule, even when the loop contains no food material or secretion from the stomach, liver or pancreas. Low loops of similar nature in the region of the ileum appear to be less rapidly productive of fatal results. To quote a few illustrative instances, Bunting and Jones have found that in rabbits obstruction of the duodenum is more quickly fatal than obstruction of the pylorus or of the ileum. Whipple, Stone and Bernheim, among others, have noted that dogs having closed duodenal loops die with symptoms like those of patients suffering from volvulus or high intestinal obstruction. It would take us too far to attempt to review here the important contributions which have been made to the solution of the problems concerned with intestinal obstruction.[1] Some of the debated points seem now to be definitely settled. Thus, among the classic explanations of death in obstruction, infection was early given a prominent place. Hartwell and Hoguet[2] have demonstrated by bacteriologic examination on dogs with high intestinal obstruction that death may result without demonstrable invasion of the blood-stream, peritoneum, liver or spleen by organisms. This and other work practically rules out the infection theory. Murphy (F. T.) and Vincent have championed the view that interference with the circulation of the obstructed intestine is the vital factor in the symptoms of ileus; but we believe that there is abundant evidence that death may occur when the intestinal obstruction is uncomplicated by any circulatory interference. Obviously damage to the intestine produced by disturbances of the circulation, particularly venous obstruction, leads to more fulminant and disastrous reactions than simple obstruction alone; but the circulatory factor is incidental and contributory here, and not the determining issue.

A further explanation of the cause of death in obstruction postulates an intoxication from within the lumen of the bowel itself. The hypothetic toxic substance has been referred by some to the activity of bacteria and to noxious substances arising within the intestinal lumen, whereas others postulate the secretion of a poisonous product by the glandular structures and walls of the alimentary tract. It is about this toxin theory that a vigorous scientific debate has lately been carried on by American investigators. That the poison is derived from bacterial life in the obstructed loops is no longer prominently defended. The bacterial flora of the upper alimentary tract is relatively scanty about the duodenum and upper jejunum and becomes much more luxuriant toward the large intestine. The more recent researches agree in showing that the part of the intestine poorest in bacterial inhabitants is that which yields most rapidly fatal results when obstructed.

There remain for consideration the variously conceived hypotheses involving the production or secretion of a poisonous substance by the mucosa itself. Draper believed that the "toxin" is contained in the duodenal secretion and is normally neutralized by the secretion of the mucosa of the jejunum and ileum. Consequently in obstruction of the upper bowel the harmful outcome was due, on this theory, to the inability of the antidotal product of the lower portions of the intestine to offset the duodenal poison. This purely hypothetic explanation has been made improbable by experiments of Whipple, Stone and Bernheim in which duodenal loop fluid was found to lose none of its toxic character when mixed with normal intestinal mucosa. Bunting and Jones have reached the conclusion that, in rabbits at least, the duodenal mucosa alone secretes the poison, and that it comes from the glands of Brunner and is responsible for the death of animals with obstruction.

The most ardent advocates of the toxin theory are Whipple, Stone and Bernheim. From the results of very elaborate studies they have come to the conclusion that the mucosa of closed duodenal loops, the latter employed because they induce the typical symptoms of death from high obstruction, must form a poisonous substance which is absorbed from it and accounts for the fatal issue. The material from such loops can be prevented from containing bile, pancreatic juice, gastric juice or digestion products, any of which might independently have been responsible for the intoxication if perchance owing to obstruction they were absorbed as such. The toxic substance is not absorbed from the normal intestinal tract. Destruction of the mucosa prevents the formation of the toxic substance, thus furnishing the final proof that the mucosa is the essential factor in the elaboration of the alleged poisonous material.

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[1] Compare, for example:
Kukula: Arch. f. klin. Chir., 1901, lxiii, 773.
Albeck, V.: Ibid., 1902, lxv, 569.
Clairmont, P., and Ranzi, E.: Ibid., 1904, lxxiii, 696.
Draper-Maury, J. W.: Am. Jour. Med. Sc., 1909, cxxxvii, 725.
Murphy, F. T., and Vincent, B.: Boston Med. and Surg. Jour., 1911, cxlv, 684.
Hartwell, J. A., and Hoguet, J. P.: Am. Jour. Med. Sc., 1912, cxliii, 357; The Journal A. M. A., July 13, 1912, p. 82.
Stone, H. B.: Bernheim, B. M., and Whipple, G. H.: Bull. Johns Hopkins Hosp., 1912, xxiii, 159.
Bunting, C. H., and Jones, A. P.: Jour. Exper. Med., 1913, xvii, 192; 1913, xviii, 25.
Whipple, G. H.; Stone, H. B., and Bernheim, B. M.: Ibid., 1913, xvii, 286, 307.
Hartwell, J. A.: Ibid., 1913, xviii, 139.

[2] Hartwell, J. A., and Hoguet, J. P.: Am. Jour. Med. Sc., 1912, cxliii, 357.

These far-reaching conclusions, charging hitherto unsuspected potencies for harm to the intestinal lining, have been vigorously opposed by Hartwell and Hoguet, who have pointed out that animals with obstruction of the lower duodenum vomit profusely. The urine shows marked abnormalities when compared with the kidney secretion in simple starvation; but if a quantity of normal saline slightly in excess of the total loss of water in the urine and vomitus be given daily in the form of hypodermoclysis, the animals return to the conditions characteristic of simple starvation and may live in excellent health for long periods. According to these investigators, therefore, the important element in the development of the toxic symptoms seen in intestinal obstruction is the hitherto unappreciated loss of water. The symptoms of intoxication are those resulting from tissue disintegration following this loss. When strangulation complicates obstruction, however, these facts do not suffice to explain the outcome.

In his most recent contribution to the subject, Hartwell[3] insists that simple stagnation does not yield a poisonous substance. According to him the only poison present in intestinal obstruction arises from the damage secondary to the obstruction, and not from the stagnation of intestinal contents or an altered function of a normal-appearing mucosa. In explanation of the experience of the opposing school Hartwell points out that in their experiments injury to the intestinal wall has been common, as judged from the necropsy records, and that in the absence of such damage there is no primary toxemia.

Clinical intestinal obstruction is almost invariably associated with a damaged intestine, and consequently it is fair to assume that a poison is produced with this condition. The valuable experimental work in which so many enthusiastic investigators have been active has made it clear that large amounts of saline subcutaneously may be used with advantage, patients having readily absorbed from three to six quarts in twenty-four hours. Hartwell maintains that in man there is no necessity of draining out the intestinal contents, which has been urged by the believers in the theory of a secreted toxin, unless the bowel is damaged. Simple stagnation does not yield a poisonous substance, and consequently the release of the obstruction by operation is sufficient. When, however, strangulation has begun, the material above the obstruction should be removed, and if extensive damage exists, a continued drainage through an enterostomy may be needed.

Current Comment

THE HEALTH TRAIN AS A STIMULUS TO SANITATION

The value of the health train, now being employed in some states to educate the people on the value of better hygiene and sanitation, is undoubted. It gives direct instruction in personal and community hygienic principles, and the printed reports of the inspectors accompanying the train concerning the towns and villages through which the train passes have become a strong stimulus to sanitary improvement. This is accomplished both through appeals to local pride and through light thrown on specific defects. The State Board of Health[1] of Michigan during the summer ran a health train through the state, touching at many points. Great interest was manifested in the lectures and the exhibits connected with the train. In the report of the inspectors, the sanitary shortcomings of many villages are set forth in plain terms. For instance, of one town it is said: "Health sentiment is at a low ebb here. The health officer was attending a picnic, but the flies were attending to business in the unscreened, filthy privies and garbage-heaps around the town." This particular town is not likely to be proud of this report, and the health officer will undoubtedly begin to clean things up. In contrast to this it was said about another town: "This is the most all-round sanitary little village visited by the special. A good progressive president and health officer, backed by a splendid sanitary sentiment." In many places it was found that the health department was active and efficient, but was not supported by the proper public sentiment. This is the chief shortcoming of most places, on the part both of the citizens and of the city or town authorities who fail to vote sufficient money to carry out sanitary measures effectively. While there was no intention of being hypercritical, the truth was plainly told in the report and without doubt the awakening secured by the health train and the report on sanitary conditions will work a great improvement. Michigan, of course, is not different in this regard from other states, and the report on conditions there would probably apply almost exactly to any state making a similar inspection. The method of teaching personal and public hygiene by the health train is a modern invention that should be encouraged.

HEALTH PROBLEMS IN JERUSALEM

The triumphs of modern sanitation have furnished so many conspicuous illustrations of what can be accomplished by the practice of the teachings of modern scientific hygiene that the possibilities involved have already become familiar to the reading and thinking public of the United States. The experience of our government alone, culminating in the splendid success of Colonel Gorgas in the Panama Canal Zone, cannot fail to awaken an eagerness to apply comparable measures speedily in all parts of the world where health conditions and sanitary environment suggest the possibility of work in the direction of eliminating disease. A conspicuous instance of the need for such work is furnished at present by Jerusalem, a city in which one out of every five of its 70,000 inhabitants carries the parasite of malaria in his blood and three-fifths of the population give evidence of enlargement of the spleen. These facts, so striking because of the enormous incidence of preventable disease and so pathetic because they mean so large a loss of human usefulness, are not hearsay figures. They are, on the contrary, the outcome of investigations by a scientific commission at the Health Bureau of the Jewish Agricultural Experiment Station in Jerusalem. This laboratory of hygiene, endowed in 1912 by the New York philanthropist Nathan Straus to combat the endemic diseases of Jerusalem, malaria in particular, has rendered a report[1] from which the statements made above have been quoted. The city is not unfavorably situated from the point of view of climate or elevation; nevertheless it is the home of disease in its most varied manifestations. This is due primarily to the great poverty of the population; and added to this is the indifference or ignorance of the Turkish officials in matters of hygiene. In the light of present-day knowledge the pictures of the primitive sanitary arrangements that still obtain in ancient Jerusalem would furnish an interesting object-lesson. As might be expected, *Anopheles* reigns supreme. The chief breeding-places of the mosquito are the cisterns which provide to the inhabitants the water-supply conserved from the rain which reaches the house-tops. Primitive privies are all too frequently found in close proximity to the drinking-water cisterns. It is an old story, the foremost interest in which now lies in the extent of the invasion of disease, especially malaria, and the consideration of the best means for combating this under the rather unusual conditions that prevail in a city where every nationality and religious sect seeks to maintain its territorial and governmental independence under the manifestly helpless jurisdiction of Turkish officials. Elsewhere the extermination of the anopheles mosquito by drainage, the use of petroleum oils, etc., has been effectively combined with prophylactic administration of quinin. A complete and expensive program cannot yet be carried out in Jerusalem. A beginning has been made by the introduction of screening-devices for the cisterns. Bacterial infections are to be eliminated in part by attention to the problems of sewage disposal. It is easy to outline ideal plans for the improvement of the unfortunate conditions which have so long been tolerated in such places as Jerusalem. The actual work of sanitary conquest must, however, keep pace with the advance of general enlightenment and political and economic progress, unless a superior power somehow is introduced which will put an end to apathy in regard to matters of hygiene.

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[3] Hartwell, J. A.: Jour. Exper. Med., 1913, xviii, 130.

[1] Bull. State Board Health, August, 1913.

PUBLIC OPPOSITION TO PROTECTIVE MEDICAL MEASURES

Opposition to legislation designed to regulate the practice of medicine, but almost wholly in the interests of the public, seems not to be confined to this side of the world. A bill introduced into the legislative council of South Australia to make better provision for the registration of medical practitioners, according to the *Australasian Medical Gazette*,[1] has created a great deal of unfavorable comment. Under this bill it is proposed to restrict the practice of medicine and surgery to those legally qualified and registered within the meaning of the act, and all practice by herbalists, dispensing chemists and quacks of all description is prohibited under penalty. The usual objection has been raised that the wording of this particular act might penalize any one who might advise a friend to take a dose of castor oil for a common ailment, or a mother who might help to relieve from pain a neighbor's child. The *Gazette*, in commenting on this opposition, says that it seems almost impossible to drive into the mind of the layman that any "common ailment" may be a symptom of a serious disease, and that the administration of a dose of castor oil to a patient suffering from constipation might be a very serious matter if the constipation were due to strangulated hernia or intestinal obstruction. It is further said that until the general public can be better educated in medical matters some will always be found who prefer to trust their lives to the heaven-inspired herbalist or quack rather than to the educated medical practitioner. It would seem also that the wolf cry, "medical trust," is raised in the antipodes as well as on this side of the earth, for the comment is made that, "unfortunately, the medical profession generally incurs public odium in any attempt to secure legislation which may protect the profession, but which helps to a much greater extent to protect the public. We are accused of attempting to establish a close monopoly. . . . The profession of medicine has a right to be protected from the competition of uneducated and unscrupulous quacks who trade on the credulity of the public, but the general public have still greater need to be protected from themselves and their own ignorance and from the 'assistance' of the writers in the lay press who fail to grasp the seriousness of the situation in advocating the recognition of the herbalist, the optician, the dispensing chemist, as competent to give medical and surgical advice." What a complete and perfect echo is this of conditions on our own side of the world!

COLLEGE ENTRANCE EXAMINATIONS, JUNE, 1913

During the week beginning June 16, 1913, under the auspices of the College Entrance Examination Board, 4,159 high-school students were examined for entrance to various colleges. The examination covered sixteen subjects, for each of which three examiners had been selected, two being teachers in colleges and one a teacher in a secondary school. Altogether, therefore, there were forty-eight examiners, experts in their various subjects, who prepared the questions for the examination. The examinations were held simultaneously in forty states of this country, and in eight dependencies and foreign countries — altogether, in 170 different cities. The examination in each city was given at some trustworthy educational institution, under selected supervisors and proctors. After the examination papers were completed they were placed in charge of readers who did the grading. This year 147 readers were appointed to grade the papers, and of these, eighty-five were representatives of colleges and sixty-two were representatives of secondary schools. In fees from candidates examined $22,335 was received. For the preparation of the questions and other service the forty-eight examiners were paid $1,629 for salaries and expenses; for grading the papers, the 147 readers were paid $12,562 for salaries and expenses; for supervision of the examinations and for proctors $2,836 was expended for salaries and expenses. Those interested in preliminary examinations should read the Thirteenth Annual Report, which may be obtained from the secretary of the board, Substation 84, New York City. When it is seen that our colleges are arranging a single, well-conducted, thorough and uniform examination covering the secondary school branches, one can but wish that all high-school examinations for admission to medical colleges might also be conducted under the auspices of the College Entrance Examination Board. This would do away with the present confusion of standards and ratings resulting from the multiplicity of agencies now issuing certificates for entrance to medical schools. Here, indeed, seems to be a solution of the gravest problem of our medical schools—the securing of a thorough and reliable "equivalent" credential by those who have not been fortunate enough to complete a course in a standard four-year high school. Here again is an examination conducted along such lines as to place it entirely above suspicion, making it worthy, therefore, of general acceptance.

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[1] Brünn, W., an[illegible] Goldberg, L.: Die Malaria Jerusalems und ihre Bekämpfung, Ztsch[illegible] f. Hyg. u. Infectionskrankh., 1913, lxxv, 209.

[1] Australasian Med. Gaz., Sept. 13, 1913.

DANCING

It seems somewhat late to enter a mild protest against the fervor with which the newest "so-called" dances have been taken up by a public already saturated with various nerve- and mind-destroying amusements and caprices. It seems unnecessary to call attention to the fact that the tango, the various waltzes, the maxixe, etc., are being arduously cultivated by callow youth and calloused old age. The problems created by these dances differ according to the age of the participants; for the young the question of morality is paramount; for the old the possibility of too great a strain on a dilated heart or an arteriosclerotic vessel is apparent. The physician will do well to caution the stiff-jointed, aged patient, who derives too great a pleasure from those — to him — potentially harmful amusements.

All Treatment an Experiment.—All treatment, however carefully chosen, is in the nature of an experiment, for none can know the exact effect of any treatment or drug on any individual patient until he has tried it. A drug may suit ninety-nine persons but be injurious to the one-hundredth because of some idiosyncrasy.—F. M. Sandwith, in *Clin. Jour.*

Medical News

CALIFORNIA

Typhoid Inoculation at University.—Antityphoid inoculation is being administered free to the students and faculty of the University of California. Thus far immunization is optional.

Hospital Dedicated.—The new Mercy Hospital, Bakersfield, was dedicated November 9, with impressive ceremonies by Right Rev. Thomas Conaty, bishop of Monterey and Los Angeles.

Sanatorium Incorporated.—The Oaks Sanatorium has been incorporated at San Jose with a capital of $50,000, and the following officers have been elected: president, Dr. Richard F. Tomlinson, San Francisco; secretary, Dr. Lily Boldemann, San Francisco; treasurer, Dr. William Boericke, San Francisco, and medical superintendent, Dr. Mary C. MacInnes, Los Gatos.

Fund for Medical Building.—The Board of Regents of the University of California announced November 11, the completion of the additional fund of $600,000 for the erection of the hospital building which is to be a part of the College of Medicine of the University. It was stated that the principal donations to the fund were from Mr. and Mrs. William H. Crocker, Templeton Crocker and Mrs. C. B. Alexander, New York, who contributed $150,000, and John Keith who also donated $150,000. A committee was appointed to administer the fund and supervise the erection of the building.

Personal.—Dr. J. M. G. Carter, Los Angeles, has donated his medical library and many scientific books to the University of Southern California.——Dr. C. L. McKown, Niles, who has been ill with septicemia at Pacific Grove has recovered and resumed practice.——Dr. Charles T. Palmer, assistant health officer of Los Angeles, is said to have been committed to the State Hospital for the Insane, Patton.——Fresno County Medical Society was entertained at dinner by Dr. C. T. Rosson at his home in Hanford, November 4.——Dr. C. H. Adair, Fresno, was struck by a street-car November 4 and seriously injured.——Dr. A. F. Gillihan, Berkeley, has been appointed health commissioner of Oakland as the result of a competitive examination.

ILLINOIS

Death of Dr. W. K. Newcomb.—As we go to press we learn of the death of Dr. W. K. Newcomb of Champaign.

Contract Let for Hospital.—The Cook County Board has awarded the contract for the tuberculosis hospital and other buildings at Oak Forest for $581,467.

New Officers.—Fox River Valley Medical Society at Aurora, November 18: president, Dr. Raymond G. Scott, Geneva; vice-president, Dr. Ora L. Pelton, Elgin.

Health Bureau for LaSalle.—Through the beneficence of Mr. F. W. Matthiessen, LaSalle, the cities of LaSalle, Peru and Oglesby are to have a model health bureau in charge of an expert commissioner, health officers and sanitary inspectors. The expense of the undertaking will be about $20,000.

Personal.—Dr. and Mrs. John A. Pratt, Aurora, and Dr. Carroll B. Welton, Peoria, have returned from abroad.——Dr. Rockwood Sager is reported to be critically ill with a cerebral hemorrhage at his home in Rockford.——Dr. and Mrs. Theophil J. Holke, Peotone, sailed for Europe November 22.——Dr. Harry M. Hayes, Peoria, is seriously ill with typhoid fever in Proctor Hospital.

Chicago

Physicians' Club.—At the opening meeting of the Physicians' Club of Chicago December 5, at the Hotel Sherman, Prof. George A. Dorsey of the University of Chicago will preside and Lieut.-Col. Charles E. Woodruff, M.C., U.S.A. (retired), will speak on "Medical Ethnology."

Personal.—Dr. and Mrs. Plumer M. Woodworth, who have been spending four months in California, have left for Honolulu, where they will spend the winter.——Dr. Sarah A. Noble has returned from Europe.——Dr. Andrew M. Harvey has been elected president of Local Council No. 3 of the National Council for Industrial Safety.——Dr. and Mrs. Charles Adams left Chicago for their new home in Honolulu, T. H., November 22.

MASSACHUSETTS

Sanatorium Fire.—Fire in one of the buildings of the Ring Sanatorium, Arlington Heights, November 17, necessitated the transfer of five patients and caused damage amounting to $2,000.

New Officers.—Boston Society of Medical Science at Harvard Medical School, November 18: president, Dr. Theobald Smith; vice-presidents, Drs. Henry A. Christian and David L. Edsall; secretary-treasurer, Dr. Thomas Ordway.

New Antituberculosis Officers.—At the annual meeting of the Springfield Association for the Prevention of Tuberculosis, November 12, Dr. George L. Schadt was elected president, and Drs. Allen G. Rice, Edgar H. Guild and Ralph B. Ober were elected members of the executive committee.

Hospital Staff Election.—At the annual meeting of the North Adams Hospital Staff November 10, it was announced that Mrs. A. L. Hopkins, Williamstown, who gave the laboratory to the hospital a year ago, is offering to provide an assistant to the pathologist of the institution. Dr. Augustus K. Boom, Adams, was reelected president and Dr. Francis J. O'Hara, North Adams, vice-president, and a conference board consisting of Drs. Martin M. Brown, Frank D. Stafford and John R. Hobbie was named to confer with the hospital authorities on matters pertaining to medical attendance at the institution.

Reporting of Occupational Diseases.—The State Board of Labor and Industries and the Industrial Accident Board are making arrangements through subcommittees for a public hearing at the State House in regard to the adoption of a regulation requiring all physicians to report occupational diseases to the joint board, this hearing to be held as provided for by Section 2, Chapter 813, Acts of 1913. Representatives of all the medical societies of the state and physicians generally will be invited to attend the conference, and the meeting will be addressed by the experts engaged by the special committee created by the joint board, James B. Carroll, James A. Lowell and Mrs. Davis R. Dewey. Arrangements for the proposed meeting are in the hands of a subcommittee, consisting of James W. Crook, Joseph A. Parks and Channing Smith. It is expected that a comprehensive plan for the reporting of occupational diseases will be developed as a result of the conference.

Mental Diseases and Alcohol.—A conference on the problems of mental disease due to alcohol, open to physicians and officials dealing with the alcohol problem, was held in the assembly room of the Psychopathic Hospital, Boston, November 24, under the auspices of the trustees of the Boston State Hospital and the legislative committee on drunkenness. After introductory remarks by Dr. Walter Channing of the Boston State Hospital, the scope of the work of the Massachusetts commission on drunkenness, 1913, was detailed by Hon. M. J. Murray, chairman of the commission; Dr. H. M. Adler described, with clinical demonstrations, types of alcoholic mental disease at the Psychopathic Hospital; Dr. T. E. Eversole read a paper on "Consensual Amyosis to Blue Light as Shown in Alcoholic Cases." Dr. H. M. Adler made some further remarks on therapy, especially hydrotherapy in various hyperkinetic states; Drs. A. W. Stearns and Mary C. Jarrett presented notes on the after-care and moral suasion work with alcoholics in the outpatient department of the Psychopathic Hospital, and Dr. E. E. Southard, director of the hospital, discussed "The Alcohol Problem Viewed From the Angle of the Psychopathic Hospital." The presentation of these papers was followed by a general discussion.

NEW JERSEY

New Jersey Sanitary Association.—The thirty-eighth annual meeting of the New Jersey Sanitary Association will be held at the Laurel-in-the-Pines, Lakewood, December 5 and 6, under the presidency of Dr. Benjamin VanD. Hedges, Plainfield.

New Officers.—Mercer County Medical Society at Trenton, November 11: president, Dr. Harry R. North; secretary, Dr. Walter A. Taylor, both of Trenton.——Tri-County (Salem, Gloucester and Cumberland) Medical Society at Bridgeton, October 28: president, Dr. E. S. Corson, Bridgeton; secretary-treasurer, Dr. George E. Reading, Woodbury.

New Board of Health Building Dedicated.—The new four-story Board of Health building at William and Plane Streets, Newark, was dedicated with simple ceremonies, November 8. The keys of the building were turned by the mayor to Dr. Herman C. H. Herold, the health officer, but the Board of Health will not occupy the building until the first of the year.

Pavilion Plans Approved.—The preliminary plans for the proposed tuberculosis pavilion and hospital annex at the Overbrook Hospital for the Insane were approved by the freeholders' committee at Newark, November 10. The pavilion will accommodate sixty-seven women and fifty-five men and will cost about $130,000. The proposed additional hospital wing, which will accommodate 200 patients, will be 200 by 40 feet, and will cost about $180,000.

NEW YORK

Health Department Exhibit at State Fair.—The State Department of Health installed an entirely new health exhibit at the state fair this year. It was divided into three sections: Home and farm sanitation, care of the baby and the child's health at school. In the sanitation exhibit there was a landscape model illustrating the pollution of streams through a large stretch of country; a model of an inexpensive sewage disposal plant for a country house, and models showing the pollution of well water and the layout of a sanitary farm.

Epidemic Sore Throat.—Numerous cases of septic sore throat and glandular involvement have been reported from various portions of the state. The patients have frequently been ill for several days with mild sore throat and temperatures of from 101 to 102 F. for several days. There is sometimes a light induration of the lymphatics at the angle of the jaw. The condition seems to be very communicable and the State Health Department recommends that patients suffering from this condition should be isolated and not allowed to mingle with other members of the household. It is also recommended that cultures be taken from the throats of all who come in contact with such cases and that they be watched to see if sore throat, or glandular enlargement, or possibly a rash or desquamation follows in two or three weeks.

New York City

Harvey Society Lecture.—The fourth in the present course of Harvey Society lectures to be delivered at the New York Academy of Medicine November 29, at 8:30 p. m. by G. H. Parker, Harvard University, is on "The Nervous System; Its Origin and Evolution."

Street Fatalities for October.—During October thirty-six children were killed in New York City by automobiles and other vehicles. This number is the highest on record and brings the total of children killed by all classes of traffic since January up to 227. Automobiles have furnished 60 per cent. of the victims of traffic in Greater New York. The National Highways Protective Association urges better playground facilities or any policy which will relieve congestion of population as a material aid in decreasing the number of street deaths by accident.

Corner-Stone of New Dispensary Laid.—The corner-stone of the new dispensary in connection with the Hospital for Deformities and Joint Diseases was laid on November 4. Among those who made addresses were Dr. Abraham Jacobi, Rabbi Maurice Harris, Judge Julius Mayer, Dr. Reginald Sayre and Felix Warburg. Dr. Herman C. Frauenthal is surgeon in chief of the hospital, which during the past year has taken in 4,023 new cases, 600 more than in 1912, and 3,811 more than in 1907. It was announced that $50,000 more was needed to complete and equip the dispensary.

Personal.—Dr. James W. Jobling of the Morris Institute for Medical Research in Chicago has been appointed assistant professor of pathology to succeed the late Dr. Hugh Angus Stewart.——Dr. Frederick S. Lee, Dalton professor of physiology of Columbia University, has been appointed delegate to the University Council from the faculty of medicine, to serve until June 30, 1916.——A memorial window to the late Dr. James Edward Newcomb has been placed in the hall of the Stony Wold Sanatorium, Lake Kushaqua, N. Y., and dedicatory exercises will be held there October 22.

Society for Advancement of Clinical Study Begins Work.—The Society for the Advancement of Clinical Study in New York issued its first bulletin of clinics for November 7. The society maintains a bureau at the New York Academy of Medicine, where the list of operations open to physicians is posted daily, together with the time of operation and the name of the operator. The bulletin of operations will be mailed to any physician for 50 cents a week, and to hospitals sending in regular reports of their lists of operations, it will be sent free of charge. It is believed that this method of informing physicians of the city what is being done in the various clinics and making it possible for them to visit these clinics is a great step in advance in dissemination of medical knowledge.

OREGON

Alumni Banquet.—The Alumni Association of the Medical Department of the University of Oregon held a meeting and banquet in Portland October 13. Dr. William E. Smith, president of the medical branch of the Alumni Association, acted as chairman, and Dr. A. G. Bettman as secretary.

Meeting of Eastern Oregon Physicians.—The annual meeting of the Eastern Oregon Medical Society was held at Hot Lake October 29. Dr. M. K. Hall, La Grande, was elected president, Dr. W. D. McNary, Pendleton, vice-president, and Dr. T. M. Henderson, Pendleton, secretary-treasurer (reelected).

Social Hygiene in Oregon.—At the second annual meeting of the Oregon Hygiene Society held in Portland, October 17, Dr. Calvin S. White was elected president, Dr. William House chairman of the publication committee, Dr. Andrew C. Smith chairman of the advisory committee, and Dr. G. N. Pease chairman of the exhibit.

State Association Meeting.—At the thirty-ninth annual session of the Oregon State Medical Association held in Medford the following officers were elected: president, Dr. Calvin S. White, Portland; vice-presidents, Drs. R. W. Stearns and J. J. Emmons; secretary, Dr. M. B. Marcellus, Portland (reelected). Portland was selected as the next place of meeting.

PENNSYLVANIA

Physician Exonerated.—A verdict exonerating Dr. Victor P. Vieslet, Charleroi, from blame in the causation of the death of John Almosi, who was struck and fatally injured by the physician's car recently, was returned by the coroner's jury, November 8.

Philadelphia

Medical College Buys Building.—Jefferson Medical College has purchased for $12,000 a three-story brick building adjoining the Jefferson College Institute of Anatomy.

Medical Staff Banqueted.—The annual meeting of the medical staff of St. Mary's Hospital was held November 19. At the banquet which followed the meeting Dr. Ellwood R. Kirby acted as toastmaster and short addresses were delivered touching on the improvements to be made at the institution early next year at a cost of $225,000.

SOUTH DAKOTA

Personal.—Dr. H. T. Ground, Aberdeen, has been appointed a member of the staff of the State Hospital for the Insane, St. Peter, Minn.——Dr. and Mrs. E. B. Taylor, Huron, sailed for Europe, November 1.

New Hospitals.—The new Peabody Hospital, Webster, was formally opened October 18. The building is 36 by 56 feet, and two stories and a basement in height, and has accommodation for sixteen patients.——Mitchell has been selected as the location of the new Methodist Hospital.

New Officers.—Black Hills Medical Association in Deadwood, November 6: president, Dr. F. E. Ashcroft, Deadwood; secretary-treasurer, Dr. F. W. Minty, Rapid City.——Third District Medical Association at Aberdeen: president, Dr. N. K. Hopkins, Arlington; secretary-treasurer, Dr. L. N. Grosvenor, Huron.

TEXAS

Association Changes Name.—The Texas Antituberculosis Association will hereafter be known as the Texas Public Health Association.

Academy of Medicine Organized.—The San Antonio Academy of Medicine was organized November 10, and the following officers were elected: president, Dr. C. A. R. Campbell; vice-presidents, Drs. J. W. Carhart and F. Hadra, and secretary-treasurer, Dr. R. A. Roberts.

New Officers.—Fifth District Medical Society at San Antonio, November 6; president, Dr. William Myers, Seguin; secretary, Dr. J. A. McIntosh, San Antonio (reelected).——Fourth District (San Angelo) Medical Association at Lampasas, October 28 and 29: president, Dr. J. W. Ellis, Lampasas; secretary-treasurer, Dr. J. M. Horn, Brownwood (reelected). Ballinger was selected as the next place of meeting——Sixth District Medical Association at Corpus Christi, October 14: president, Dr. F. G. Painter, Corpus Christi; secretary-treasurer, Dr. L. J. Manhoff, Port Aransas.

Personal.—Dr. R. L. Vineyard, Amarillo, has been appointed house physician at the Santa Fe General Hospital, Temple.——Dr. and Mrs. H. A. Logsdon, Forth Worth, entertained the Phi Chi Medical Fraternity of Texas University, November 3.——Dr. J. P. Simonds, professor of preventive medicine in the State University, Galveston, has been appointed assistant professor of pathology in the medical department of Northwestern University, Chicago.——Dr. and Mrs. G. A. Wedemeyer, Taylor, have returned from abroad.——Dr. Milton W. McMurray suffered a fracture of two ribs and a severe sprain of the ankle in a collision between his automobile and a Frisco passenger train at Houston, October 29.

WASHINGTON

Personal.—Dr. Jesse Wilbur Calkins, Seattle, has gone to Europe for three years' study.——Dr. J. M. Semple, superintendent of the Eastern Washington Hospital for the Insane, Medical Lake, has resigned to take effect November 9.

Silver Jubilee of Society.—The King County Medical Society celebrated its silver jubilee at Seattle with a banquet at the Arctic Club over which Dr. Arthur E. Burns presided as toastmaster. Ten of the charter members of the association were present.

Anatomical Club Incorporated.—Eleven physicians of Seattle have incorporated an anatomical club for the purpose of carrying on studies in surgical anatomy. The association has an arrangement with the county commissioners of King County by which the bodies of paupers will be furnished for dissection.

New State Board Members.—Governor Lister on November 15 announced the appointment of a new board of medical examiners. From the regular school Drs. Robert Percy Smith and Andrew J. Nelson, Seattle; Royal A. Gove, Tacoma; Jesse J. Tilton, Toppenish, and Conrad N. Suttner, Walla Walla, were appointed. Drs. James A. MacLachlan, Dayton, and Elmer D. Olmsted, Spokane, are representatives of the homeopathic school, and J. R. Walker, Sunnyside, and J. E. Hodgson, Spokane, are the osteopathic members of the board.

WEST VIRGINIA

Hospital Incorporated.—The Beckley Hospital and Nurses' Training School, with accommodations for thirty patients, has been incorporated by Drs. James E. Coleman, Fayetteville, and Robert Wriston, Beckley, with a capital stock of $25,000.

Physicians of Four Counties Meet.—At the annual meeting of the Grant, Hampshire, Hardy and Mineral Counties Medical Society, held in Piedmont, October 16, the following officers were elected: president, Dr. Zadock T. Kalbaugh, Piedmont; secretary-treasurer, Dr. W. Holmes Yeakley, Keyser (reelected).

Instruction of Health Officers.—In accordance with the provisions of the county medical practice law, the State Board of Health held a meeting in Parkersburg, November 28, devoted to the instruction of county and municipal health officers in the region adjacent to Parkersburg. In the evening a public meeting was held at which Dr. A. B. Frost, U.S.P.H.S., Governor Hatfield, and the president and secretary of the state board made addresses on subjects pertaining to health affairs.

Personal.—Dr. Joseph M. Houston, Elm Grove, was painfully injured by a fall from a horse November 10.——Dr. L. A. Davidson, West Milford, is ill and under treatment at the State Hospital, Weston.——Dr. Jonathan Edward Burns, Wheeling, has returned from Europe.——Dr. Lewis V. G. Guthrie, Huntington, has been reappointed superintendent of the West Virginia State Hospital, Huntington.——Dr. Robert A. Ashworth, Richwood, has been appointed official physician for the State Penitentiary, Moundsville, vice Dr. J. C. Peck, resigned.——Dr. John W. Gilmore, Wheeling, has been appointed a member of the medical board of the View Point Sanitarium and Ohio County Antituberculosis Dispensary, vice Dr. Thurman Gillespy.

GENERAL

Meeting of Alton Surgeons.—At the annual meeting of the Chicago and Alton Railway Association of Surgeons held in Chicago, November 8, Dr. H. C. Fairbrother, East St. Louis, was selected president and Dr. J. W. Dreyfus, Louisiana, Mo., vice-president.

Soo Line Surgeons to Meet.—The seventh annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association will be held in Milwaukee December 4 and 5. Governor McGovern of Wisconsin will deliver an address on "The Workman's Compensation Act."

Personal.—Dr. A. E. Spaulding, Luverne, president of the Minnesota State Medical Association, has been elected president of the Rock Island Railway Surgeons' Association.——Dr. Henry M. Bracken, St. Paul, secretary of the Minnesota State Board of Health, has been elected president of the Minnesota School Hygiene Association.——Drs. Homer J. Hall, Franklin, Ind., has been elected a vice-president of the National Council of One-Hundred, a reform organization connected with the

Anti-Saloon League, and Dr. Thomas D. Crothers, Hartford, was elected a member of the council.

Appropriation for Scientific Research.—The trustees of the American Medical Association have made a new appropriation for the Committee on Scientific Research. The committee has decided to use this money as far as possible to promote work in medical research where suitable conditions exist but where such work suffers for the lack of relatively small sums of money. Applications for grants are invited and may be sent to any member of the committee, which consists of L. Hektoen, 1743 West Harrison Street, Chicago; S. Flexner, Rockefeller Institute for Medical Research, New York, and William Litterer, Vanderbilt University, Nashville, Tenn.

Bequests and Donations.—The following bequests and donations have recently been announced:

Mount Sinai Hospital, New York City, $100,000, one-half of the income to be used for the department of nervous diseases, and the remainder for the general purposes of the hospital; St. Luke's Hospital, German Hospital and Dispensary, New York Eye and Ear Infirmary and Lincoln Hospital and Home, each $25,000 by the will of Benjamin Altman.

New York Post-Graduate School and Hospital, $2,000 by the will of Mrs. Mary L. Parsons.

Beth Israel Hospital, New York City, $5,000; Mount Sinai Hospital, $2,500; Lebanon Hospital and the Montefiore Home, each $1,500; Hospital for Deformities and Joint Diseases, Har Moriah and the National Jewish Hospital, Denver, each $1,000.

Mount Sinai Hospital, New York, German Hospital and the Montefiore Home each $2,500 by the will of Max E. Bernheim.

South Bend Visiting Nurses' Association, a donation of $5,000 by Mrs. George W. Wyman.

Boston Medical Library, $86,800 by the will of Mrs. Ellen B. Wyman, Newburyport, Mass., to be known as the Samuel Wheeler Wyman Memorial Fund.

Charity Hospital, New Orleans, $20,000 by the will of Mrs. Tilton, a donation of $1,000 from the estate of Edward Rosenberg, a second payment of equal amount to be paid Oct. 1, 1914.

Army Medical Corps Examinations.—The surgeon general of the Army announces that preliminary examinations for appointment of first lieutenants in the Army Medical Corps will be held on Jan. 19, 1914, at points to be hereafter designated. Full information concerning these examinations can be procured on application to the "Surgeon General, U. S. Army, Washington, D. C." The essential requirements to secure an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits and shall have had at least one year's hospital training as an intern, after graduation. The examinations will be held simultaneously throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. In order to perfect all necessary arrangements for the examinations, applications must be completed and in possession of the adjutant general at least three weeks before the date of examination. Early attention is therefore enjoined on all intending applicants. There are at present twenty-six vacancies in the medical corps of the Army.

CANADA

New Hospital.—A new fifty-room hospital is to be erected at Walkerville, Ont., at a cost of $50,000.

New Officers.—Vancouver Medical Association: president, Dr. J. W. McIntosh; vice-president, Dr. W. D. Keith; secretary-treasurer, Dr. A. B. Schinbein. At the meeting November 10, Dr. Peter H. Bryce, medical officer, Department of the Interior, Ottawa, delivered an address on "The True Physician as Sociologist."

Dissatisfaction with Examination of Schoolchildren.—Several school trustees of the board of education, Toronto, are dissatisfied with the medical inspection of schoolchildren as carried out at present by the board of education, and will back the city council in its appeal to the Ontario government for special legislation to have the inspection done under the health department of the city.

Personals.—Dr. Charles A. Webster, graduate of Knox College, Toronto, and now professor of anatomy at Beirut, Syria, has terminated his furlough in Toronto and has returned to his duties in the foreign mission field of the Presbyterian Church of Canada.——Sir Arbuthnot Lane returning from Chicago, spent a day in Toronto and inspected the new General Hospital and the Wellesley private hospital. Sir Arbuthnot considers the Toronto General Hospital the best he has ever seen. He visited Ottawa November 22, and sailed from Montreal for England November 29.

Medical Inspection of Schools in British Columbia.—The Committee on the Medical Inspection of Schools of the Canadian Medical Association at the annual meeting in London last June, reported that medical inspection of schools was further advanced in the province of British Columbia than in any other province in Canada. Dr. C. J. Fagan, secretary of the Board of Health of that province, has just reported to the provincial secretary on this work for the year ended June 30. This work has been prosecuted since 1911, has made considerable progress and is now well-organized throughout that province. The whole work is under the supervision and charge of the provincial board of health and the medical inspectors in the unorganized districts are paid by that board. The work done in the cities of Victoria, New Westminster, Vancouver and South Vancouver has been excellent. When the tabulated report is inspected it is seen that there is a great number of scrofulous conditions present in the pupils. Twenty per cent. of all children reveal some sign of tuberculosis. Dr. Fagan urges the establishment of outdoor classes and outdoor schools and argues that the principle of the preventorium or open-air school should be extended so as to include all schools. In nearly all schools the teachers have heartily cooperated in the work. A report on 29,774 children shows that 16,774 are unvaccinated. All told 37,591 pupils were examined, enlarged tonsils and defective teeth giving the largest numbers: for the former, 5,302; for the latter, 12,644.

LONDON LETTER

(From Our Regular Correspondent)

London, Nov. 8, 1913.

Nostrums in Australia

An address read before the Queensland branch of the British Medical Association by Dr. David Rosenburg contains some interesting information on the nostrum problem at the antipodes. In 1905 an act was passed which compelled a proper trade description of imports, including foodstuffs and patent medicines, but no restrictions were imposed with regard to articles produced in the commonwealth. As a result the following ridiculous situation has arisen: A preparation was imported which was known to be harmful but which bore a misleading label stating that it was harmless, especially to children. Under the commerce act the importers were called on to amend the statements. Instead of doing so they imported the substance in bulk and printing the labels in Australia, packed and labeled the medicine in the old way and so its sale was unaffected. The customs department has prevented the importation of (1) "cure-alls" with extravagant claims and absurd prices; (2) spirits claiming vast medicinal benefits, and (3) preventives to conception. A cancer cure which was prohibited by the customs is now being made in Victoria and freely sold. "Radam's Microbe Killer" was objected to because its label declared: "It is a positive and certain cure for all diseases and is guaranteed to be perfectly harmless. It will effect a cure in every instance if given a fair trial. It is perfectly harmless, and can be taken in any quantity without danger." Dr. Rosenburg quoted the fact that analysis by the American Medical Association showed that it contained hydrochloric acid, sulphuric acid and red wine. Its importation was prohibited, with what result? It is now being made in Victoria, and the federal government has no power over the advertisements or manufacture. The following are some other examples of articles, the importation of which was prohibited but which are now freely made and sold in the commonwealth: Blair's gout and rheumatic pills were prohibited because they falsely claimed to affect psoriasis and eczema, which they alleged were gouty skin affections. The label of "Wioletta Hair Tonic" was objected to by the customs. In the *Australasian* it is advertised thus: "I'm the absolute cure for baldness." Indian Root Pills and Doan's Backache Pills, "a specific for diabetes, congestion of the kidneys, inflammation of the bladder," are being imported in bulk, and after leaving the customs are packed in Australia, and the commonwealth government has no power over them. Under the commerce act the claims for medicinal benefit from alcohol are not allowed on importation. The following are some specimens of the advertisements of articles manufactured in the commonwealth: "White Horse Whiskey"—"heart tonic." Wolfe's Schnapps—"a standard tonic," and, again, "A stimulant that is medicinal in its action, and is a direct health promoter, worthy of all men drinking. It has curative effect in kidney, bowel, and urinary affections." "Wincarnis," 21.4 per cent. proof spirit. "Vigorous vitality and sturdy strength."

Natives in the Medical Service of the Indian Army

In my last letter the effect of the recent throwing open of civil medical appointments in India to local practitioners, usually natives, was discussed. The medical service of the Indian Army, though open to the natives, has been mainly recruited from the British Isles. The examination is held in London and the appointments have been highly prized because the pay and other emoluments are much better than those in the British Army. The most brilliant of the recently qualified physicians have freely competed for them. The diminution of the emoluments is already producing a serious effect on the number of British candidates. At the last examination twelve vacancies were offered, and five of the successful candidates, including the first three, were Indians. It may be added that all the candidates must have British qualifications. This is not the first time that an Indian has headed the list of successful competitors. Admission to the Indian Medical Service was first thrown open for all duly qualified British subjects in 1853, and at the first competitive examination held under this act an Indian passed with the highest rank. In 1864 he was appointed professor of materia medica in the Calcutta Medical College, a post which he held until his death in 1874. Half a century elapsed before another Indian headed the list. But the obtaining of the first three places by Indians is unprecedented. That this is due not to exceptional merit of the Indian candidates but to diminished competition of the British, is indicated by the fact that the marks obtained in this competition are unusually low. In the last twelve examinations the highest marks obtained by the first man were 4,120 and the lowest 3,447. Only once have the numbers been less than on the present occasion (3,517). The marks of the twelfth man have varied from 3,554 to 2,958, whereas in the last examination they were only 2,878.

Sugar as a Butter Preservative

An unsuccessful prosecution was brought against a Liverpool firm on the charge of selling butter containing sugar. The prosecution claimed that the 1.2 per cent. of sugar present was a foreign ingredient. According to the law sugar could be used as a preservative; but as the quantity here present was not sufficient, it must be regarded as a foreign substance. The defendant stated that sugar was put in because the public liked a mild sort of butter. The magistrate dismissed the charge as he thought the act contemplated the presence of other preservatives besides salt.

Royal Commission on Venereal Diseases

The king has approved of the appointment of a royal commission to inquire into the subject of venereal diseases in the United Kingdom, their effects on the health of the community, and the means by which these effects can be alleviated or prevented, it being understood that no return to the policy or provisions of the contagious diseases acts is to be regarded as falling within the scope of the inquiry. These acts provided for the compulsory examination and detention of prostitutes. The public feeling aroused against them grew so much that their reintroduction in any form is out of the question. As stated in previous letters to The Journal, the appointment of this commission may be traced to the resolution passed at the International Medical Congress. It is composed of prominent public men and women, clergymen and a number of medical specialists (Sir Malcolm Morris, Sir John Collie, Dr. Mott, Mr. Ernest Lane and Mrs. Scharlieb). For a long time attempts have been made to induce the government to appoint this commission. In 1899 memorials were presented to Lord Salisbury (then prime minister) by the royal colleges of surgeons of England and Ireland and the British Medical Association, but the breaking out of the Boer War caused the subject to be shelved. In the same year the International Congress on Venereal Diseases was held at Brussels and resolutions were passed urging the various governments to appoint commissions of inquiry. The congress declared definitely against anything in the nature of the contagious diseases acts. Next a discussion on the subject took place at the Royal Society of Medicine in 1912. In June of this year Sir Malcolm Morris published an article in the *Lancet*, which received editorial support, asking for the appointment of a royal commission and drawing attention to the grave dangers of venereal disease being contracted innocently. Later a letter was published in the *Morning Post* asking for the appointment of a royal commission, signed by the presidents of the royal colleges of physicians and surgeons, the professors of medicine in the universities, and the presidents of the medical societies. This letter was endorsed by the representative meeting of the British Medical Association. A remarkable feature of the situation is the open manner in which the lay press has discussed the problem of venereal disease. During the meetings of the congress columns of the leading journals, the *Times* and *Morning Post* in particular, were devoted to discussions on syphilis. A few years ago these journals would scarcely dare to print the word and would use some periphrasis such as "a certain contagious disease."

PARIS LETTER

(From Our Regular Correspondent)

Paris, Nov. 7, 1913.

Action of Chlorids on Calomel

It is customary to warn patients who have taken calomel to refrain from salt or salted foods for some hours at least, after the medicine has been taken. Occasional complications which follow the taking of calomel have for a long time raised the question of a possible decomposition of calomel, with the formation of corrosive sublimate, in the presence of the sodium chlorids in foods. The question of the incompatibility of calomel and of table salt has been studied again recently. Dr. Patein, head pharmacist at the Lariboisière hospital, recently reported before the Académie de médecine the results of his experiments, which show that practically calomel is transformed into the sublimate by chlorids and lactates of sodium and ammonium, preformed or not, only when these salts are neutral. Decomposition begins only when the medium becomes alkaline. Sodium chlorid has the property of protecting calomel against the decomposing action of sodium carbonate. The purgative action of calomel cannot be attributed to its partial decomposition in the stomach. Patein found that dogs which had taken calomel mixed with salt showed no symptom of intoxication.

The Red-Cross Emblem

A recent decree fixed the conditions under which the red cross on white field or the words "red cross" or "Geneva cross" may be employed when, under exceptional conditions, their commercial use is authorized. According to this decree, goods made by private persons may bear these emblems or words on the packages or wrappers only on condition that they have been manufactured on commission for public use in the army or navy or for societies officially authorized to give aid to the sanitary service of the army or for associations which are officially authorized to give aid to the wounded, the sick or the shipwrecked and which have hospital buildings provided with an official commission.

Hygiene Among Barbers

At the last session of the Société de prophylaxie sanitaire et morale, Dr. Charles Fouquet, who had been commissioned to report on methods of diminishing the danger of infection from barbers, made the following recommendations, which are to be submitted to the barbers' organization: (1) that customers known to be sick or apparently sick should supply their own implements; (2) that the barber should wash his hands with soap and water before waiting on a customer; (3) that only clean and sterilized instruments should be used. It must be admitted that the first of these demands is unreasonable, since the barber cannot be expected to have this knowledge. For the cleaning and sterilizing of the instruments the following are the rules to be recommended: Edged tools should be washed in a 1 per cent. solution of sodium carbonate and dried; hair-brushes, shaving-brushes and combs should be cleaned every evening with water, soap and ammonia; metallic instruments should be passed through the flame; basins and shaving-brushes should be immersed in boiling water each time used; brushes and combs should be kept hermetically closed in a compartment in which stands an uncovered saucer containing a 40 per cent. dilution of liquor formaldehydi; the powder-puff should be replaced by a pad which should be thrown away after use, or by a shaker; rock alum should also be replaced by powdered alum applied with a pad; also the barber should not whet the razor on the palm of the hand.

Organization for English-Speaking Students

A Britannic section of the Université de Paris has been founded at the Sorbonne by English-speaking students. It is intended to facilitate relations between its members and English and American men and women who are interested in the intellectual affairs of France. Foreign students from English-speaking countries are admitted on the same footing as French students. The annual fee is 4 francs (80 cents).

Marriages

Edward Eames Holman, M.D., Pine River, Minn., to Miss Mary E. Corey of Terre Haute, Ind., at St. Paul, Minn., October 28.

William Stanley Timblin, M.D., Chicago, to Miss Frances Ray Goldsworthy of Windsor Park, Chicago, November 22.

Clyde Watkins Jump, M.D., Bozeman, Mont., to Miss Belle B. Pierce of Townsend, Mont., at Helena, November 5.

Michael Penn Cummings, M.D., Reidsville, N. C., to Miss Besse Ray Grove of Philadelphia, November 12.

George Tilman Banker, M.D., to Miss Katharine deWolfe Marble, both of Elizabeth, N. J., November 15.

Theodore Alan Willis, M.D., Clear Lake, Ia., to Miss Clara Marian Hammer of Harlan, Ia., November 4.

Rabun Thomas Wilson, M.D., Houston, Tex., to Miss Metta Inez Andrews of Abilene, Tex., November 5.

Francis Palmer Richards, M.D., to Miss Mildred Edith Burnett, both of Mackay, Idaho, October 23.

Thomas Francis Leen, M.D., to Miss Anna Jones Malley, both of Boston, at Brookline, November 11.

Harry Merton Page, M.D., Ashford, Wash., to Miss Amelia Johnson of Kelso, Wash., October 19.

Eugene A. MacCornack, M.D., Chicago, to Miss Harriet L. Hiebner of Glencoe, Ill., September 5.

Harvey P. Matthews, M.D., to Miss Emma L. Grennell, both of Brooklyn, November 11.

Joseph D. Ely, M.D., Hudson, Mich., to Mrs. Ellen Van Buskirk of Fayette, O., November 8.

Harper Lane Proctor, M.D., to Miss Sara Maude Gross, both of Jacksonville, Fla.

W. H. Grainger, M.D., to Miss Jessie Costa, both of East Boston, November 12.

Deaths

John T. McAnally, M.D. Northwestern University Medical School, 1883; a Fellow of the American Medical Association; of Carbondale, Ill.; formerly mayor of that city; for two terms a member of the Illinois State Board of Charities; at one time president of the Illinois State Medical Society, councilor of the Ninth Illinois District, and a member of the House of Delegates of the American Medical Association; one of the best known practitioners of Southern Illinois; died in the Presbyterian Hospital, Chicago, November 19, aged 65.

John Brown Gaston, M.D. University of Pennsylvania, Philadelphia, 1855; a member of the Medical Association of the State of Alabama; surgeon of the Nineteenth Alabama Regiment, C.S.A., and later division surgeon during the Civil War; twice mayor of Montgomery and since 1895 probate judge; a prominent and beloved citizen of Montgomery; died at the home of his son, November 8, aged 79.

John G. Daniels, M.D. University of Louisville, Ky., 1877; health officer of Upshur County, Texas; a member and a secretary of the Board of Medical Examiners for the Seventh Judicial District of Texas from 1888 to 1901; local surgeon of the St. Louis and Southwestern Railway since 1883; died at his home in Gilmer, October 30, aged 60.

William Royal Engel, M.D. Jefferson Medical College, 1906; formerly physician in charge of the Thermal Belt Sanatorium, Tryon, N. C., and of the North Carolina Tuberculosis Sanatorium, Montrose, and since 1911 a practitioner of Charlotte, N. C.; died at his old home in Tryon, October 28, from tuberculosis, aged 35.

Rudolph Clarence Mollman, M.D. University of Pennsylvania, Philadelphia, 1900; of Reading, Pa.; died at Longport, Atlantic City, N. J., November 5, from the effects of a gunshot wound believed to have been self-inflicted with suicidal intent, while despondent on account of ill health, aged 37.

C. W. Theodore H. Ruehring, M.D. University of Göttingen, Germany, 1892; formerly of Nordheim, Texas; local surgeon of the San Antonio and Aransas Pass Railroad; a member of the American Association of Life Insurance Examining Surgeons; died at his home in Lockhart, Texas, November 4, aged 39.

Gurley Davis Moose, M.D. University of Maryland, Baltimore, 1907; of Mount Pleasant, N. C.; a Fellow of the American Medical Association; who contracted tuberculosis while an intern in Johns Hopkins Hospital; died from that disease in a hospital in Asheville, N. C., November 7, aged 30.

Thomas James, Jr., M.D. Hospital College of Medicine, Louisville, 1901; was found dead in his office in Louisville, October 22, from the effects of a bullet wound of the right temple, believed to have been self-inflicted with suicidal intent, while despondent on account of ill health, aged 35.

Allen M. Hall, Pennsylvania University, Lexington, Ky., 1848; chief surgeon of the Eighth Tennessee Infantry, C.S.A., during the Civil War; a practitioner of Sumner and Shelby counties, Tenn., for many years; died at the home of his daughter in Memphis, October 28, aged 90.

Samuel B. Mills, M.D. University of Louisville, 1852; for several years teacher of physiology and hygiene in the Louisville schools; at one time a member of the Board of Health; died at the home of his daughter in Fostoria, Louisville, October 24, from senile debility, aged 85.

Thomas Constantine Finnell, M.D. New York University, New York City, 1880; acting assistant surgeon, U. S. Army, during the Spanish-American War; physician for the Board of Health and Board of Education, New York City; died suddenly, November 6, aged 54.

Fred J. Peterson, M.D. California Eclectic Medical College, Los Angeles, 1900; died at his home in Camp Meeker, Cal., September 9, from the effects of a gunshot wound believed to have been self-inflicted with suicidal intent, while despondent on account of ill health.

George W. Campbell, M.D. College of Medicine of Southern California, Los Angeles, 1889; formerly a member of the city council of Los Angeles and coroner of Los Angeles County; a pioneer of Boyle Heights; died in the Clara Barton Hospital, Los Angeles, October 27.

William Lloyd Richards, M.D. University of Pennsylvania, Philadelphia, 1896; formerly a member of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; died at his home in Wilkes-Barre, November 6, aged 39.

Philip T. O'Brien, M.D. Albany (N. Y.) Medical College, 1872; for several years a member of the board of selectmen and the town school committee of Plymouth, Mass.; died at his home in Plymouth, October 31, from cerebral hemorrhage, aged 64.

George Alton Kennedy, M.D. University of Toronto, Ont., 1878; of Macleod, Alta.; surgeon-captain in the Northwest Mounted Police and local surgeon of the Canadian Pacific System; died in the Winnipeg General Hospital, October 8, aged 55.

Rudolph Ravenburg, M.D. George Washington University, Washington, D. C., 1874; a veteran of the Civil War; for half a century an employee of the War Department, Washington, D. C.; died in his apartment in that city, October 23, aged 81.

Thomas Benjamin Amiss, M.D. University of Pennsylvania, Philadelphia, 1861; a member of the Medical Society of Virginia and a surgeon in the Confederate service throughout the Civil War; died at his home in Luray, November 9, aged 74.

John Palmer Birch, M.D. Hahnemann Medical College, Philadelphia, 1870; for several years a member of the West Philadelphia School Board; died in the Hahnemann Hospital, Philadelphia, October 31, after a surgical operation, aged 81.

David K. Stringer, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1880; a practitioner of Grundy and Sullivan counties for forty-six years; died at the home of his daughter in Trenton, Mo., November 11, from cirrhosis of the liver.

Elizabeth G. Pyrum-Perry, M.D. Eclectic Medical College of the City of New York, 1882; a practitioner of New York City until 1892 and thereafter a resident of Fryeburg Center, Me.; died in that place, November 7, from pneumonia, aged 93.

Walter Lowry Williams, M.D. New York University, New York City, 1872; a member of the Medical Society of the State of Pennsylvania; local surgeon for the Pennsylvania System at Ridgway; died at his home, November 8, aged 69.

Bennie Castleman, M.D. University of Nashville, 1910; of Gladeville, Tenn.; died in St. Thomas' Hospital, Nashville, October 1, six days after an operation for appendicitis, aged 33.

Charles Edward Feller, M.D. Rush Medical College, 1885; of St. Paul, Minn.; died in St. Joseph's Hospital in that city, October 31, from stricture of the esophagus, aged 58.

John Tidwell Nethery, M.D. Vanderbilt University, Nashville, Tenn., 1891; a practitioner of Gibson County, Tenn., for more than thirty years; died at his home in Caruthersville, Mo., October 23, from cerebral hemorrhage, aged 61.

Daniel D. Kreider, M.D. Medico-Chirurgical College, Philadelphia, 1911; a Fellow of the American Medical Association and president of the Board of Health of Mount Holly Springs, Pa.; died at his home, November 7, aged 30.

Thomas E. Casterline (license, Nebraska, 1891); a practitioner for more than forty-five years; a veteran of the Civil War; one of the proprietors of the Edgar *Sun*; died at his home in Edgar, Neb., October 21, aged 87.

Wilson A. Long, M.D. College of Physicians and Surgeons, Baltimore, 1882; of Frederick; a member of the Medical and Chirurgical Faculty of Maryland; died in St. Agnes' Hospital, Baltimore, November 7, from pneumonia.

James Fleming McCarrell (license, Washington County, Pa, 1881, Allegheny County, Pa., 1890); a practitioner since 1868; died at the home of his brother in Dinsmore, October 31, from pneumonia following a fall, aged 81.

Harry A. Smith, M.D. University of Southern California, Los Angeles, 1894; for some time physician at the Whittier State School; died in his office in Los Angeles, November 2, from internal hemorrhage, aged 40.

Bryant Hopkins Nowlin, M.D. Bellevue Hospital Medical College, 1873; Louisville Medical College, 1886; a Confederate veteran; of Iola, Texas; died at the home of his daughter in Teague, Texas, August 9, aged 72.

George Thomas Mason, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1892; of Mount Pleasant, Iowa; for two terms auditor of Henry County; died at his home, November 4, aged 62, from nephritis.

Samuel Bell Bunch, M.D. University of Nashville, Tenn., 1889; of New Roe, Ky.; was found dead near his home October 26, from the effects of an accidental gunshot wound of the chest, aged 59.

John H. Howard (license, Tennessee, 1899); in practice for more than fifty years; a Confederate veteran; died at his home in Lexington, September 7, from hemorrhage of the stomach, aged 81.

Edward C. Lemen, M.D. Washington University, St. Louis, 1868; for forty years a practitioner of Alton, Ill.; a veteran of the Civil War; died in a sanatorium in Jacksonville, November 9, aged 72.

D. D. Potter, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1883; of Seward, Neb.; died at the home of his brother in Mount Hope, Kan., November 4, from tuberculosis.

Durand Hatch Albright, M.D. Jefferson Medical College, 1851; one of the oldest practitioners of Alamance County, N. C.; died at his home near Snow Camp, November 3, from cerebral hemorrhage.

Charles Edgar Wilson, M.D. Medical School of Maine, Brunswick, 1885; a member of the Maine Medical Association; died at his home in East Hiram, November 4, from heart disease, aged 60.

Samuel Augustus Marlin, M.D. Western Pennsylvania Medical College, Pittsburgh, 1894; of Clinton, Pa.; was killed in an automobile accident near Stoop's Ferry, Pa., October 23, aged 50.

Daniel A. Arter (license, Westmoreland County, Pa., twenty years' practice, 1881); a practitioner since 1850; died at his home in Canton, Ohio, November 5, from senile debility, aged 85.

James C. Johnson, M.D. Atlanta (Ga.) Medical College, 1859; for many years a practitioner of Macon, Ga.; died at his home in Vineville, November 1, from senile debility, aged 75.

James S. Baugh, M.D. Trinity Medical College, Toronto, Ont., 1881; medallist of his class; died suddenly at his home in Hamilton, Ont, October 18, from heart disease, aged 63.

John Kuestner, M.D. Hahnemann Medical College, Philadelphia, 1887; of Philadelphia; died in the Pennsylvania Hospital for the Insane, October 20, from strangulation by food.

Frank Marion Davis, M.D. Ohio Medical University, Columbus, 1901; a Fellow of the American Medical Association; died at his home in Pittsburgh, November 7, aged 44.

Charles Lingham Cunningham (license, Maryland); a practitioner for more than twenty-five years; died at his home in Cresaptown, October 22, from nephritis, aged 51.

George W. Armentrout, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1899; died at his home in Letts, Iowa, November 2, from heart disease, aged 50.

Ivan Annett, M.D. Western University, London, Ont., 1911; of Windsor, Ont.; died in Victoria Hospital, London, Ont., October 5, after a surgical operation, aged 23.

Camillus B. Faulconer, M.D. St. Louis Medical College 1865; a physician and capitalist of Montgomery, Mo.; died at his home, August 31, from nephritis, aged 78.

William W. Hill, M.D. Toledo (Ohio) Medical College, 1883; a veteran of the Civil War; died at his home in Weston, Ohio, October 17, from arteriosclerosis, aged 66.

William A. Hawk, M.D. Jefferson Medical College, 1880; a physician and pharmacist of Tower City, Pa.; died at his home, October 24, from heart disease, aged 50.

Edward Horan, M.D. Queen's University, Belfast, Ireland, 1880; of San Francisco; died in Trinity Hospital in that city, October 25, from pneumonia, aged 59.

James B. Crucial (license, years of practice, North Dakota); known as James Buchanan Cross; died in the Cass County Hospital, Fargo, October 30, aged 84.

Thomas D. Gamble, M.D. Washington University, St. Louis, 1858; of Wheatland, Iowa; died at the home of his daughter in that place, November 7, aged 83.

John Martin Cameron, M.D. Victoria University, Coburg, Ont., 1887; formerly of Thessalon, Ont.; died at his home in North Yakima, Wash., October 29.

A. E. Smith, M.D. Starling Medical College, Columbus, O., 1883; of Bracken County, Ky.; died at the home of his aunt in Cincinnati, October 14, aged 56.

Peter Fisher (license, years of practice, Illinois, 1878); for fifty years a practitioner; died at his home in Edwardsville, October 29, from uremia, aged 74.

Francis M. Cullum (license, Arkansas, 1908); an eclectic practitioner of Hartman; fell into a well at his home, November 3, and was drowned, aged 50.

Neill Monroe Culbreth, M.D. University of Tennessee, Nashville, 1882; died at his home in Wilmington, N. C., September 1, from spinal disease, aged 63.

Leonadus A. Rutherford, M.D. Eclectic Medical College of the City of New York, 1877; died at his home in Kinston, N. C., October 23, aged 63.

David O. Munsey, M.D. Medical College of Ohio, Cincinnati, 1878; a veteran of the Civil War; died at his home in Gaston, Ind., October 30, aged 68.

Allan B. Carscallen, M.D. Queen's University, Kingston, Ont., 1875; died at his home in Enterprise, Ont., recently from cerebral hemorrhage.

Arthur Harris Davis, M.D. University of Nashville, Tenn., 1879; died at his home in Little Rock, August 27, from heart disease, aged 53.

William Lafayette Abernethy, M.D. Kentucky School of Medicine, Louisville, 1877; died at his home in Hickory, N. C., in August.

William Frank Minard, M.D. Hahnemann Medical College, Philadelphia, 1887; of Waterbury, Vt.; died in Boston, October 9, aged 46.

Franklin Slocum (license, Michigan, 1900); a practitioner since 1858; died at his home in Ludington, September 6, aged 73.

Sidney A. Pierce, M.D. University of Pennsylvania, Philadelphia, 1868; died at his home in Rochester, N. Y., August 24, aged 68.

Clarence George Clark, M.D. University of Michigan, Ann Arbor, 1899; died at his home in New York City, November 5, aged 36.

Charles Anson Munn, M.D., New York University, New York City, 1883; died at his home in New York City, September 27.

William F. Sharp, M.D. Missouri Medical College, St. Louis. 1873; died at his home in Davilla, Tex., October 9, aged 73.

Thomas Abram Perrin, M.D. University of Michigan, Ann Arbor, 1873; died at his home in San Jose, Cal., October 6.

L. C. Presley (license, Arkansas, 1903); died at his home in Peebe, September 25, aged 74.

John Milton Homan, M.D. Harvard Medical School, 1903; died at his home in East Everett, Mass., October 6, aged 37.

Benjamin C. Jones, M.D. Missouri Medical College, St. Louis, 1867; died at his home in Poplar Bluff, Mo., October 9, aged 77.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

PULMONOL

Another Fraudulent Consumption Cure

"Fifty thousand physicians and all standard text-books endorse every ingredient in Pulmonol." Yes, and a hundred thousand physicians and standard text-books endorse every ingredient in dishwater; soap is good, grease is good, water is good, each in its place; but neither physicians nor any one else recommend dishwater as a cure for consumption. Neither does any physician nor any layman, except he be a fool or a knave, recommend Pulmonol as a cure for consumption.

Pulmonol is put on the market by the Pulmonol Chemical Company, New York City. The Pulmonol Chemical Company seems to be a trade name assumed by one Arthur Vincent Payne, M.D., who terms himself "medical director."

Like all consumption cures, the stuff is pushed by means of lying claims and worthless testimonials. Like every other concern that exploits "cures" for consumption, the Pulmonol Company seems to find it more natural to lie than to tell the truth when describing its panacea. In the advertising pamphlet sent out to boards of health and tuberculosis societies, Arthur V. Payne, M.D., makes this statement:

> "Many eminent and broad-minded physicians prescribe Pulmonol and use it in their private practice as their own product . . ."

Of course this is a falsehood and its author knows it is a falsehood, but apparently he expects to "get away with it." In another booklet the concern says:

> "We spent a year trying to get the doctors to use Pulmonol and finally had to give up the job."

Of the various claims made for this stuff, these are typical:

> "It cleans out the lungs."
> "Stops night sweats."
> "Prevents hemorrhages."
> "Strengthens the heart."
> "Gives strength to resist disease."
> "Cures the most stubborn coughs."

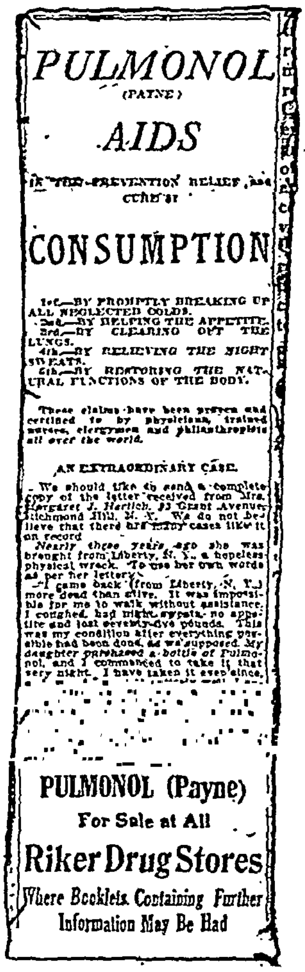
Like some other men in the consumption-cure business, A. V. Payne is shrewd enough to recommend, in his advertising matter, that those taking Pulmonol shall follow the rules laid down by reputable physicians for the treatment of tuberculosis; that, in addition to taking his nostrum, they shall live in the open air as much as possible, eat nourishing food and in other ways follow out the approved method of treating the disease. Such suggestions, coming from "patent medicine" exploiters are worthless, as every physician knows. The one reason, above all others, that causes the consumptive to fly to the quack is his belief, born of ignorance and the optimism that characterizes the disease, that the medicine he buys will relieve him of the necessity of following the strict regimen laid down by his physician.

There is an inborn belief amoung the laity that there is a specific drug for every disease—if the medical profession were only wise enough to discover it. The quack, either inferentially or directly, assures the public that he *has* found the specific; and the public believes him! It is the universal experience of those who have had much to do with consumptives that dietetic and hygienic measures are disregarded in direct proportion to the amount of medicine the sufferer takes. Herein lies the viciousness of the consumption cure. A. V. Payne may smugly "point with pride" to his "literature," in which he urges those who buy his nostrum to follow the rules laid down by scientific men in the treatment of tuberculosis, but he knows, unless he is more fool than knave, which we doubt, that such rules will not be followed, once the victim begins relying on Pulmonol.

SOME TESTIMONIALS INVESTIGATED

A few of the testimonials published by the Pulmonol Chemical Company have been investigated with the usual results. The testimonial-givers are, as always, divided into two classes; those who really had tuberculosis and those who did not have it. As we have said many times, it is useless to investigate fresh testimonials. Most of them are written in good faith and not until the cases have progressed further are the victims undeceived as to the efficiency of the nostrum. It is therefore necessary to wait a year or two before looking into testimonials of this class. We then find, invariably, that the consumptive who had relied on the nostrum is dead. This is what has been found in the case of Pulmonol testimonials.

One testimonial published by the Pulmonol concern was featured as an "Extraordinary Case." "We do not believe that there are many cases like it on record," says the booklet, which, after giving the testimonial, suggests that "The Committee on Tuberculosis will find this a most interesting case for its investigation." It will! The poor woman whose case is described therein has been dead for some years, and we have evidence that indicates that the Pulmonol Company continued to publish the testimonial not only after the death of the victim, but after that death had been specifically brought to the attention of A. V. Payne. A nice, ghoulish sort of business!



PULMONOL
(PAYNE)
AIDS
IN THE PREVENTION RELIEF AND CURE OF
CONSUMPTION

1st—BY PROMPTLY BREAKING UP ALL NEGLECTED COLDS.
2nd—BY HELPING THE APPETITE.
3rd—BY CLEARING OUT THE LUNGS.
4th—BY RELIEVING THE NIGHT SWEATS.
5th—BY RESTORING THE NATURAL FUNCTIONS OF THE BODY.

These claims have been proven and certified to by physicians, trained nurses, clergymen and philanthropists all over the world.

AN EXTRAORDINARY CASE.

We should like to send a complete copy of the letter received from Mrs. Margaret J. Herlich, 93 Grant Avenue, Richmond Hill, N. Y. We do not believe that there are many cases like it on record.

Nearly three years ago she was brought from Liberty, N. Y., a hopeless physical wreck. To use her own words as per her letter:

"I came back (from Liberty, N. Y.) more dead than alive. It was impossible for me to walk without assistance. I coughed, had night sweats, no appetite and lost seventy-five pounds. This was my condition after everything possible had been done, as we supposed. My daughter purchased a bottle of Pulmonol, and I commenced to take it that very night. I have taken it ever since, [illegible]

PULMONOL (Payne)
For Sale at All
Riker Drug Stores
Where Booklets Containing Further Information May Be Had

Fig. 1.—Photographic reproduction (reduced) of a typical Pulmonol newspaper advertisement. The woman whose testimonial appears in this advertisement died of consumption months before the advertisement appeared!

Another testimonial, published under the heading, "Unbiased Physician Recommends Pulmonol," was that purporting to come from a Brooklyn physician, who is alleged to have recommended Pulmonol to a tuberculous patient who was so nearly dead "that the priest was called in and the last rites were administered." The man took Pulmonol, says the booklet, "and is still taking it. He is not entirely well, but well enough to be one of the happiest men in Brooklyn." Not so; the poor fellow may be happy, but he is not in Brooklyn. He went the way of all consumptives who have reached the last stages of the disease.

Here are some other cases: Mrs. F. A. C—— testifies that she took seventeen bottles of Pulmonol "and was greatly benefited." This testimonial appears in a booklet entitled, "Fighting the White Plague, or Consumption, with Pulmonol." The inference, naturally, is that Mrs. F. A. C—— had been cured of consumption by the use of Pulmonol. The case was investigated and Mrs. C—— was found to be a strong, robust woman whose case had never been diagnosed as tuberculosis, but who just "knows she had it" because she coughed a great deal! And on such testimony as this is this wretched fraud sold to the consumptive.

In the same booklet Mrs. E. J. S—— says that her husband had "lung trouble." "He took six bottles of Pulmonol and it cured him." Here again, we note that no direct statement is made that the man has been cured of tuberculosis; but the inference is there. Investigation shows that Mr. E. J. S——, who is living and well, never had tuberculosis.

Mr. L. E. F—— also gives a testimonial that, inferentially, gives the impression that Pulmonol has cured him of consumption. Our investigation, however, shows that such is not the case, for poor F—— was one of those who really had tuberculosis. He is now dead.

Mr. S—— is alleged to have testified that he was afflicted with tuberculosis and had "consulted the best physicians." He tried sanatorium treatment, but in spite of all continued to get worse. Finally he "bought a bottle of Pulmonol" and "took the medicine as a joke." As a result he alleges: "I am now relieved of all distressing symptoms and gaining in weight and strength daily—and attending to business." This case was investigated with some care and the physicians under whose treatment he claims to have been at the sanatorium were written to for a history of the case. We found that Mr. S—— died of tuberculosis some time ago.

A testimonial dated from a village of less than 1,300 population and alleged to have been written by a Mrs. A. O. B——, urges "every one suffering with consumption" to take Pulmonol as she had done. A physician who lives and practices in this village was written to regarding this case, the full name of the alleged testimonial writer being given. He replied that, although he had lived in the place more than ten years, he had never heard of such a person.

Mrs. C. D. W—— is another individual whose name is given in the testimonial list. On making inquiries, we discovered that Mrs. W—— did have tuberculosis and still has it. She is not taking Pulmonol at present. Her physician says, "Her health is somewhat better than it was a few years ago," and he adds: "I do not consider her improvement due to Pulmonol."

Mr. L. S——, the Pulmonol concern would have the public believe, was cured of tuberculosis by the use of its nostrum. We find, on looking into the matter, that Mr. S—— had tuberculosis some five years ago and that he went to the state sanatorium for treatment. He returned much better. His family physician writes us that he regards this "as an arrested case, produced by sanatorium treatment."

The same old story: the individuals that really suffered from consumption and relied on the "consumption cure" are dead. Every testimonial for a "consumption cure" that we have investigated—and they number hundreds—brings out the same facts: In those cases in which the individuals are still living, they either did not have consumption, or the arrest of the disease was due to scientific treatment and not to the nostrum for which they had testified.

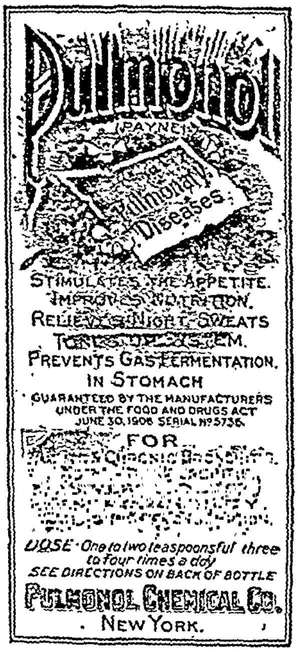

Pulmonol
(PAYNE)
Pulmonary Diseases
STIMULATES THE APPETITE.
IMPROVES NUTRITION.
RELIEVES NIGHT SWEATS
TONES UP SYSTEM.
PREVENTS GAS FERMENTATION.
IN STOMACH
GUARANTEED BY THE MANUFACTURERS
UNDER THE FOOD AND DRUGS ACT
JUNE 30, 1906 SERIAL Nº 5736.
FOR
CHRONIC BRONCHITIS
DOSE · One to two teaspoonsful three to four times a day
SEE DIRECTIONS ON BACK OF BOTTLE
PULMONOL CHEMICAL CO.
NEW YORK.

Fig. 2.—The Pulmonol label.

WHAT IS PULMONOL?

Pulmonol has been analyzed in the Association's laboratory and, as is the case with most nostrums, has been found to contain drugs that have been used for years by reputable physicians. And yet Arthur Vincent Payne, M.D., yclept the Pulmonol Chemical Company, has the effrontery to declare that Pulmonol is a prescription that he has perfected after he had "given his entire life to a study of tuberculosis and diseases of the lungs." Essentially, Pulmonol consists of a mixture of benzoate of soda, a guaiacol compound, with a dash of strychnin, dissolved in a mixture of glycerin and water. Here is the chemist's report:

> "Three original bottles of 'Pulmonol' (manufactured by the Pulmonol Chemical Company, New York) were received at the Association's laboratory and subjected to chemical analysis. The bottles contained a red, aqueous liquid, having a bitter taste and a faint odor of benzoic acid. Its specific gravity was 1.088.
>
> "Qualitatively Pulmonol contained potassium, sodium, benzoate, sulphonate, glycerin, guaiacol (or cresol), strychnin and coloring matter. The red coloring matter responded to tests for the dye known as bordeaux. The guaiacol was present in a combined form and its characteristic odor became apparent only after boiling with strong sulphuric acid. The strychnin was probably present as the sulphate, as a very faint trace of sulphate was detected.
>
> "Quantitatively the mixture closely corresponded to the following:
>
> | | | |
> |---|---|---|
> | Potassium guaiacol sulphonate | 5.7 | per cent. |
> | Sodium benzoate | 2.1 | per cent. |
> | Strychnin sulphate | 0.008 | per cent. |
> | Glycerin | 11.6 | per cent. |
> | Water | 77.7 | per cent. |
> | Difference | 2.8 | per cent. |
>
> Each fluidounce of Pulmonol is equivalent to approximately 29 grains of potassium guaiacol sulphonate, 10 grains sodium benzoate and 1-24 grain strychnin sulphate.

SUMMARY

To sum up: Pulmonol, exploited as a cure for consumption, is a vicious and wicked fraud. Only physicians know the enormous amount of harm done by men of the A. V. Payne type. Those who are conducting a campaign of public enlightenment on the subject of tuberculosis know how difficult it is to eradicate from the public mind the old, pernicious idea that drugs will cure consumption. Those who are selling fraudulent "consumption cures"—and there are no "consumption cures" of the drug type that are not fraudulent—undo, by their lying claims, in a few minutes the good that it has taken weeks and possibly months to attain.

It is the universal experience of visiting nurses and others who come in daily contact with consumptives that just as soon as the victim begins to rely on a widely advertised "cure," he immediately becomes careless of the safety of others and relaxes those efforts which are necessary if he hopes to overcome the disease. It is but human that such should be the case. The tendency is to follow the line of least resistance. If consumption can be cured by taking something out of a bottle four times a day, why should the sufferer subject himself to the minor inconveniences of the more or less strict regimen laid down by the physician?

Of all mean businesses in the world, there are few, if any, more contemptible, more heartless or more economically vicious, than that carried on by the man who enriches himself at the expense of the life of the unfortunate consumptive. Of all tainted money, none is quite so dirty as the blood-toll collected by the "consumption cure" faker.

Correspondence

"Red Not a Satisfactory Danger-Signal"

To the Editor:—From an editorial with this title (THE JOURNAL, Nov. 8, 1913, p. 1724), I quote: "Just why it was selected as a danger-warning is a question for the anthropologist and historian to determine." I am not an anthropologist or a historian, but simply an eye-specialist. There is one very good reason why red has been selected as the danger-signal. Red is the one color, outside of the ordinary white or yellow light, that is seen at a great distance. At sea the first light to be seen on an approaching vessel is her white masthead light, next her port red light, and some time later her starboard green light. The substitution of yellow for one of the colors would be impossible, as it would be confused with every window- and street-light in town. There is no other unmistakable color that can be seen at so great a distance as red. Color-blind persons should not be entrusted with the navigation of ships or the operation of railway-trains.

FRANK W. EDMONDS, M.D., Berkeley, Cal.

The Suicide-Rate of San Diego

To the Editor:—In the editorial on "Anomalies of Suicide," THE JOURNAL, Nov. 8, 1913, p. 1721, the suicide-rate for the city of San Diego, according to the statisticians, is given as "more than 40" per hundred thousand. Calculations are made, of course, on the basis of the census enumeration of 1910, which gives the official population of the city as 39,578. The census here was very poorly taken, and it was notorious that this estimate was far below the population at the time it was taken. Tents were even erected by private citizens to endeavor to obtain the registration of those who had been neglected by the enumerators. The population of the city as estimated by the compilers of the city directory in the different years, and by the number of water consumers, has been estimated by the Board of Health as follows. The city has doubled in population within the last five years owing to its *approaching* exposition, Jan. 1 to Dec. 31, 1915, and the construction of the railway to Yuma, now under way. Appended to the population numbers are the suicides for the year.

Year	Suicides	Population
1908	11	42,500
1909	12	45,000
1910	9	45,000
1911	20	55,000
1912	16	65,000
1913	23	85,000

There have been nineteen suicides to October 31, and on this basis twenty-three have been estimated for the year.

Average population for six years, 56,250:

Suicides: total, 91; average, 15.16 per annum.

Rate per hundred thousand, 26.95.

Francis H. Mead, M.D., San Diego, Cal.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE HARLOW-HAYHURST BLOOD-STAIN

To the Editor:—About two or three years ago there appeared in The Journal an article on the use of a certain blood-stain. This stain consisted of two solutions, one of eosin in methyl alcohol and the other methylene blue in methyl alcohol. The directions were to dip the slide in Solution 1 for twenty seconds and then without washing into Solution 2 for twenty seconds. I used this stain with great satisfaction, but when I had used it up I was unable to procure a fresh supply. Can you furnish me the formula?

J. Bennett Townsend, M.D., Anderson, S. C.

Answer.—Other correspondents have inquired regarding the composition and method of use of this blood-stain. The Harlow stain is discussed by W. P. Harlow in the *American Journal of the Medical Sciences*, 1904, cxxvii, 662, and in The Journal, March 6, 1909, p. 768; while the Hayhurst modification is fully described by E. R. Hayhurst in The Journal, Dec. 4, 1909, p. 1909. For the use of our readers we give, herewith, a brief description of this stain.

Preparation of Stains: Dissolve 0.5 gm. of eosin (Grübler's water-soluble) in 50 c.c. of absolute methyl alcohol (Merck's highest purity), and place in a 3-ounce wide-mouthed bottle. Keep bottle tightly stoppered.

Dissolve 0.5 gm. of methylene blue (Ehrlich's medicinal) in 50 c.c. of absolute methyl alcohol and place in a bottle similar to the preceding.

Technic of Staining: Prepare smears of the blood on slides or cover-glasses in the usual manner.

Drop the smear, air-dried but without other fixation, into the bottle containing the eosin stain and allow to remain for twenty seconds.

Remove, drain an instant against the mouth of the bottle and drop the smear directly (without washing) into the methylene blue stain for twenty seconds.

Remove, drain as before, wash rapidly to and fro (three or four quick swashes) in a tumbler of water, shake off the excess of water and dry between filter-paper. Examine with the immersion lens.

The properly stained slide should have a pink-red appearance. The carrying over of a small amount of the eosin solution into the methylene blue solution during the staining process seems to prevent deterioration of the stain by age (when the stain is used only every few days), owing to the neutralization of the excess of alkali (in the blue) by the acid eosin solution. If the stain is frequently used, it may need correcting to overcome defects in its staining properties. If the stained smear shows little or no blue coloration, add a drop of 20 per cent. sodium or potassium hydroxid to the stock methylene blue solution; while a drop of glacial acetic acid should be added, provided the stained smear appears too blue (the red cells being purple). In this way the activity of the stain may be kept constantly under control.

Used in this manner and corrected as described, the Harlow-Hayhurst stain is fairly panoptic, and is simple, convenient and dependable for routine blood-work.

BIOGRAPHIC SKETCHES AND WORKS ON BLOOD-PRESSURE

To the Editor:—Please tell me where I may find satisfactory sketches of (1) Koch; (2) Pasteur; (3) Ehrlich, and (4) Jenner; and furnish me a list of the recent more or less comprehensive works on (5) blood-pressure.

M. S. Davie, M.D., Dothan, Ala.

Answer.—The following books and articles may be consulted:

1. Wezel, Karl: Robert Koch, eine biographische Studie, Berlin, August Hirschwald, 1912.
   Ford, W. W.: Life and Work of Robert Koch, *Bull. Johns Hopkins Hosp.*, December, 1911.
   Knopf, S. A.: Robert Koch, the Father of Modern Tuberculosis Science, The Journal, May 6, 1911, p. 1308.
2. Vallery-Radot, René: Life of Pasteur, New York, Doubleday & Page, $2.50.
3. Paul Ehrlich, editorial, The Journal, Feb. 5, 1910, p. 471.
   Corbus, B. A.: A Visit to Ehrlich, correspondence, The Journal Oct. 8, 1910, p. 1305.
4. Article on Jenner, in Masters of Medicine, New York, Longmans, Green & Co., $2.
5. Oliver, George: Blood and Blood-Pressure, Chicago Medical Book Company, $3.
   Nicholson: Blood-Pressure in General Practice, Philadelphia, J. B. Lippincott Company, 1913, $1.50.
   Faught, F. A.: Blood-Pressure from the Clinical Standpoint, Philadelphia, W. B. Saunders, 1913, $3.

HAINES' SOLUTION

To the Editor:—About a year ago last winter we found a formula in The Journal for the sugar test in urine. This test was to be used in place of Fehling's. We have found it more sensitive and more stable than Fehling's, but have lost the formula. Please give the formula.

H. A. Davis, M.D., Dickinson, N. Dak.

Answer.—We believe that the solution referred to is Haines' solution. The composition of this solution is as follows:

Copper sulphate	12 gm.
Potassium hydroxid	45 gm.
Glycerin	90 c.c.
Water	q. s. ad 1,000 c.c.

This forms a clear, transparent, dark-blue liquid. Four or five c.c. are placed in a test-tube and gently boiled. Six drops of the suspected urine are added and the upper portion of the mixture brought to a boil and immediately removed from the flame. If sugar is present an abundant yellow or yellowish-red precipitate is thrown down; if no such precipitate occurs sugar is absent. The precautions to be observed in using this test are never to add at the outside more than 10 drops of urine and not to boil the mixture for more than one or two seconds after the addition of urine.

TREATMENT OF INDICANURIA

To the Editor:—Please answer the following queries:

1. How would you permanently cure a marked indicanuria in a young man which has been persisting for the last five years?

2. Would you resort to the lactic acid bacillus treatment of Metchnikoff?

3. If so, which is the most reliable preparation?

4. What would result if this condition were left untreated?

X. Y. Z., New York.

Answer.—1. The presence of indican in the urine depends on putrefaction in the intestine. The process of putrefaction may be dependent on various factors. Therefore, in order to secure a permanent cure of indicanuria, we must remove the causative factors. For this purpose the bowel should be emptied and regular bowel movements secured. Inflammation of the intestine should be allayed and a diet which does not readily putrefy should be given. The diet should be mainly carbohydrate. The entire exclusion of protein for a short time at the beginning of the treatment may be advisable.

2. It is doubtful if this treatment would do any good, but it might be worth trying.

3. A number of preparations are put on the market by reliable firms, any of which may be depended on if fresh.

There are a number mentioned in New and Nonofficial Remedies. It should be remembered that the administration of lactic acid germs should always be accompanied with carbohydrate food from which the germs can form the necessary lactic food.

4. Many pathologists believe that a considerable number of internal diseases are due to the absorption of poisonous material from the intestine. It is very probable that other poisons than indican are formed in the process of putrefaction, and it is probable that these poisons have much more serious effects than indican or indol.

BASS AND WATKINS TEST—THE HERMAN-PERUTZ TEST

To the Editor:—1. Please describe the Bass and Watkins rapid Widal test.

2. Please give the Herman-Perutz test for syphilis, and state whether it is reliable.

M. B. MCCAUSLAND, M.D., Imlay City, Mich.

ANSWER.—1. The Bass and Watkins method is published in text-books on clinical diagnosis. Reference may be made to Webster's "Diagnostic Methods," p. 588.

2. The Herman-Perutz method is described in THE JOURNAL, *Feb. 18, 1911, p. 547, in an abstract of the original article* in the *Medizinische Klinik*, Jan. 8, 1911. In a recent article by J. Kallos (*Deutsch. med. Wchnschr.*, Sept. 25, 1913, p. 1885), the direction is given not to let the mixture of serum and reagent stand more than twenty hours. The test seems to give reactions very similar to those of the Wassermann test, but in secondary syphilis it does not give a positive reaction so frequently. It should be used only as confirmatory to the Wassermann reaction.

ORGANISM OF WHOOPING-COUGH—FAVORITE METHOD FOR INJECTING SALVARSAN

To the Editor:—1. Has a specific organism been isolated for whooping-cough?

2. Which method is most in favor, the intravenous or the intramuscular injection of salvarsan?

P. E. LINEBACK, M.D., Anaconda, Mont.

ANSWER.—1. Such an organism was isolated by Bordet and Gengou a few years ago and is known as the Bordet-Gengou bacillus of pertussis. The following references may be consulted:

Bordet: The Microbe of Pertussis, *Brit. Med. Jour.*, Oct. 9, 1909.
Wollstein, M.: Bordet-Gengou Bacillus of Pertussis, *Jour. Exper. Med.*, January, 1909.
Mallory, F. B., and Hornor, A. A.: Pertussis: Histologic Lesion in Respiratory Tract, *Jour. Med. Research*, November, 1912.
Mallory, F. B.; Hornor, A. A., and Henderson, F. F.: Relation of Bordet-Gengou Bacillus to Lesions of Pertussis, *Jour. Med. Research*, March, 1913.

2. From a general view of the situation we should be inclined to say that the intravenous method has by far more adherents than the intramuscular in the injection of salvarsan. No definite statistics as to which method is most in favor are available.

DEATHS FROM EATING CHESTNUTS

To the Editor:—The newspapers recently contained a report of the death of a woman from poisoning by eating chestnuts. Please explain how chestnuts can be poisonous.

S. T. A.

ANSWER.—We have communicated with the Bureau of Plant Industry in reference to this question, and have received the following statement: "It is true that deaths have occurred in the region where the chestnut blight is prevalent, and that the chestnuts from these trees have been eaten by the patients. Further than that we have now no definite information. The matter is under investigation by this bureau at the present time, and we hope soon to know at least the fundamental facts."

THE ROSENBACH AND AARON SIGNS

To the Editor:—Please describe (1) the Rosenbach sign and (2) the Aaron sign for appendicitis.

E. C. BRUSH, M.D., Zanesville, Ohio.

ANSWER.—1. We have been able to find three different signs known as the Rosenbach sign: (*a*) tremor of the upper lids in exophthalmic goiter when the eyes are gently closed; (*b*) loss of the abdominal reflex in cases of inflammation of the *intestine, and (c) inability of neurasthenics to close the eyes* immediately and completely on command.

2. We do not know what the Aaron sign

Miscellany

Medical Examinations After the French Revolution

On Aug. 18, 1792, the Constitutional Assembly of France passed a decree abolishing the medical faculties and societies and throwing open medical practice to any one who could pay for the privilege, the competitive examinations (*concours*) being mere farces. A chaotic state of affairs ensued, and had it not been for the law of 1794, establishing medical schools at Paris, Montpellier and Strasburg, to keep up the supply of army surgeons, France might in time have been under the absolute sway of quackery. On March 10, 1803, Napoleon, then first consul, put a stop to all this by a law which remained in force until Nov. 30, 1892, definitely establishing the status of physicians, surgeons, public health officers and irregular practitioners and requiring public examination of those seeking the right to practice. Dr. Ernest Wickersheimer, the scholarly librarian of the Académie de médecine (Paris), has just published an amusing protocol (*Paris médical*, 1913, *x, 749) of an actual examination*, held in 1804 in the department of l'Eure, by a jury presided over by Pierre Lassus of the Paris Faculté, which runs as follows:

First examination of Langlet, called La Chapelle, a self-styled "patented officer of health," in the presence of M. Lassus and the other members of the medical jury of l'Eure on the 8th Messidor of the year 12. Certain coarse and indecent remarks which he had made prior to his examination induced a member of the jury to attack him with the following questions:

Q. What is the clitoris?

A. The clitoris is the vagina, three parts together.

Q. Show us your stomach and your chest.

A. He showed one for the other.

Q. What is the eye?

A. The globe of the eye is composed of light; there is also extravasated blood and similar material.

Q. What is the ear?

A. The ear is the light which makes us understand things by its clearness, etc.

Q. How does a child come into the world?

A. A child comes as Adam, on its mouth, laboring the earth.

Q. What do you do when the anus is a blind alley?

A. If the man is dead, there is nothing more to do, still you might blow into the orifice to drive out the excrement by the mouth.

Q. What difference is there between a man and a woman?

A. The man has a virile member; the woman has two holes, the anus and the vagina.

Q. Where is the *fraise?*

A. In the umbilical bowel.

Q. Where is the pericranium?

A. In the placenta.

Q. Where is the atlas?

A. Among the vertebrae, or the shoulder-blade, or the spinal cord.

Q. Where is the peritoneum?

A. In the chest.

Q. What are the lungs?

A. They are the air, the breath of life.

Q. Where is the scrotum?

A. Near the anus and the vagina.

Q. What is the acromial apophysis?

A. It is the dislocation of the femur, or the round bone, or the tibia, of the fibula which comes out by its neck, a whirl, a sprain of cartilage.

Q. What is the great trochanter?

A. It is in the patella, tibia and fibula.

Q. Where is the sternum?

A. The sternum is above, inferior and within.

Q. Where are the atrabiliar capsules?

A. They are exterior.

Q. Where are the kidneys?

A. They are surcingular, exterior or above the girdle.

Q. Where are the suprarenal capsules?

A. Upon the kidneys.

Q. Where is the spleen?

A. Between the lungs and the livers, in the chest, where the livers have several branches.

Q. Where is the thymus?

A. I am not a physician.

Q. Where are the cuneiform bones?

A. I give it up.

Q. Where is the pelvis?

A. The pelvis is the woman's region and nature.

Q. What is labor (*accouchement*)?

A. When the accouchement is for the time liquid and dilated, the fisobis presenting itself in the placenta, when the woman is in childbirth, her husband is scared to death and the woman about to be delivered has to remain in bed for six weeks, say the authors.

Q. After that what happens?

A. The clitoris being swollen with chagrin, prevents the woman from being delivered, the woman not proceeding in her trouble and the child not laboring for itself, cannot come into the world until the end of six weeks, on account of chagrin.

Q. What do you notice at the moment of delivery?

A. At the moment when a woman is delivered, the fundament enlarges and, for proof, I have seen a child and the excrement together in my hand.

Q. What are the ovaries? Where are they placed?

A. I renounce.

Second examination of Langelet La Chapelle, in the presence of the prefect of the department of l'Eure, Evrux, the 9th Messidor of the year 12.

Q. What is anatomy?

A. It comprises all the things of the body.

Q. How is the skeleton divided?

A. It is divided by the skull, occipital and cubital.

Q. What is the shoulder?

A. The shoulder is composed of the shoulder-blade and clavicle, forearm, ulna and radius.

Q. What is the wrist?

A. It is composed of the neck of the membrane.

Q. Describe the lower extremities.

A. It is composed of the thigh, patella, tibia, fibula, tarsus and metatarsus.

Q. What are the vertebrae?

A. All the vertebrae are of use. They are the essentials of man and his force.

Q. What are the loins?

A. I do not remember.

Q. How many ribs are there?

A. There are ten.

Q. What do you call the anterior bone of the chest?

A. It is the os sacrum.

Q. What is the peritoneum?

A. I do not remember.

Q. What are the lungs?

A. The breath, in the belly.

Q. Where is the heart?

A. In the chest.

Q. Where is the liver?

A. As it is in pigs.

Q. How many intestines are there?

A. Two; the large and the small.

Q. What is the cesarean operation?

A. It was Caesar who came into the world that way.

Q. How have you performed it?

A. By puncture, the bistoury being underneath the last rib, by an opening of four inches. After the first cicatrix, I opened, I took the infant in its receptacle, I placed the receptacle on the thighs of the woman, I sewed it up and put it back into the abdomen and I sewed the first cicatrix with an ordinary needle and a simple thread. The child lived; the bowels which came out were put back into the belly. I did this operation because the woman was feeble and without hope, and no pulse to be felt. She recovered without fever, kept her diet for four or five days; I dressed her with sugared wine. Six weeks afterward the woman was dancing in the assembly. The swelling had suppurated; I treated it with camphorated brandy; the swelling or thrombus still remains. This woman had a natural delivery one year before; a year afterward she was delivered very happily at the foot of a tree.

Q. How do you recognize a dislocation?

A. By the moving joints.

Q. How is a dislocated arm reduced?

A. I reduce it alone. I lift the arm and I reduce it with the finger in its proper place.

Q. What is the descent?

A. In the testicles, in the ring of the isles.

Q. What is the scrotum?

A. It is a part of women. It is placed at the fundament or anus. It is not an opening, it is a round part; it contains the vagina; it serves them for sitting down.

Q. Where is the spleen?

A. Above the womb.

Q. Where is the cerebellum?

A. In the head, in front.

Q. Describe the ear.

A. The ear is composed of temporals, occiput and parietals.

Q. Where are the seminal vesicles?

A. In the virile member, the bladder. In women, it is higher than in men.

The examiners in this droll questionnaire clearly understood their business. As it was plain that the candidate did not even know the parts of his own body, we can hardly blame them for exposing the extent of his ignorance by asking him about parts which do not exist. Dr. Wickersheimer does not state whether or not the candidate was successful, but the result may be inferred.

Medical Economics

This Department Embodies the Subjects of Post-Graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

PRESENT ACTIVITIES IN PUBLIC HEALTH

The growing interest in public health is illustrated by the attention paid to this question by life-insurance companies and other business organizations, and the establishment of departments of public health by some of the state universities. Many of the insurance companies, large industrial concerns and special societies also issue pamphlets on various specific topics.

REGISTRATION OF VITAL PHENOMENA

Probably the most intimate connection between public health and business so far established is that between life insurance and vital statistics. Mr. Louis I. Dublin, statistician for the Metropolitan Life Insurance Company, recently delivered an address before the annual conference of health officers of Indiana, which has been reprinted in pamphlet form. After discussing the value of birth and death registration from a public point of view, Mr. Dublin takes up their value from a personal and commercial point of view, showing by cases from the records of life-insurance companies the importance and value of birth, death and marriage registration, and the commercial value of properly kept records. He concludes his paper by saying, "I hope that I have indicated the extent and character of the losses which result from neglect of thoroughly registering vital phenomena. If communities were to realize that they are called on ultimately to meet these losses, I think that we would have an awakening of public interest in careful civic accounting or human life. . . . . In life-insurance companies alone, fully one-fourth of the disputes would never arise were adequate records on hand. The saving of losses due to present litigation could then be returned as larger benefits to our clients, and would remove many causes for dissatisfaction. We cannot regard these losses as anything more than downright waste."

MISSOURI DEPARTMENT OF PREVENTIVE MEDICINE

The University of Missouri, like the University of Wisconsin, has established a department of public health. In Missouri it is known as the Department of Preventive Medicine. This department offers to furnish to any citizen of Missouri, on request, practical information regarding the prevention of disease. A laboratory is also equipped to make any necessary examinations, these services being free of charge to the people of the state. Three pamphlets have been issued so far, one on "Bacteria and Disease," by Dr. O. W. H. Mitchell, assistant professor of pathology and bacteriology; and pamphlets on "Typhoid Fever" and "Contagious Diseases Among Schoolchildren," by Dr. W. J. Calvert, professor of preventive medicine. The last-named pamphlet has just been issued. It contains three chapters, one on "The Nature of Communicable Diseases, and the Ways in Which They Are Spread," one on "The Symptoms of the More Common Infectious Diseases," and one on "School Hygiene," under the head of "Cleanliness, Pure Water, Ventilation and Heating." The recognition of public health as a legitimate field for the state university, and the establishment of a department of preventive medicine with a laboratory free to the citizens of the state, is a marked step forward in the social program for the prevention of disease. The recognition of the closely allied facts that prevention of disease is a social problem, and that it can be solved only through public education, is most important. In these two suggestions lies the solution of the problem of preventable disease.

PURIFICATION OF WATER-SUPPLIES

The United States Geological Survey has issued "Water-Supply Paper 315," which is published as H. R. Document 1236, entitled "The Purification of Public Water-Supplies." In it are discussed the sources of water-supply for cities in the United States. In the northern and middle Atlantic states the use of lake and spring water is common. In the more southerly states waters from rivers are more commonly used, especially in the Mississippi and Ohio valleys. In nearly 400 cities, 40 per cent. of the water-supply is drawn from wells, 25 per cent. from lakes, ponds or springs, 24 per cent. from rivers, and 11 per cent. from mountain streams. The various sources of city water-supply are discussed, and the development of water-works systems in the United States, water consumption, typhoid fever in the United States and water purification, with an exhaustive discussion of methods and comparative values.

The section on typhoid fever shows that in 1900 there were over 35,000 deaths from this disease, and that in 1910 the typhoid fever death-rate in the forty-eight cities having a population of 100,000 or over was 23.3 per hundred thousand. Under the main subject of "Water Purification" the methods of slow and rapid sand filtration and the different means of sterilization are discussed, with illustrations showing water-purification plants in different cities.

ARMY HOSPITAL REPORT

The medical department of the United States Army maintains a general hospital at Ft. Bayard, N. Mex. The report of this hospital, just issued, shows that 928 patients were treated there during the past year; 56 deaths occurred, 46 of which were from tuberculosis; 686 patients were admitted during the year, of whom 154 were returned to duty; of 672 cases of pulmonary tuberculosis 46 were incipient, 288 were moderately advanced, 337 were far advanced, and one was a case of acute miliary tuberculosis. Of these, 32 patients were apparently cured, 77 were arrested, 352 were improved, 160 were unimproved and 51 died.

PAMPHLETS ON PUBLIC HEALTH AND ALLIED TOPICS

The most interesting literature on public health questions is to be found at present in pamphlets and bulletins rather than in books or journals. Most of the state boards of health publish pamphlets on various subjects for popular distribution. The variety of subject, method of treatment and material found in these pamphlets constitutes one of their most interesting features.

NORTH CAROLINA HEALTH BULLETIN

The *Health Bulletin of the North Carolina State Board of Health* for October shows on the first page photographs of eight babies which have taken prizes at baby contests in various Southern states, and the announcement, "Watch this page for North Carolina prize-winners after the state fair." The cover also contains a list of pamphlets and leaflets printed by the state board for free distribution. This list includes such subjects as care and feeding of the babies, flies and mosquitoes, hookworm, malaria, tuberculosis and vital statistics. An article from the *Progressive Farmer*, "Why I am Down on Patent Medicines," gives practical advice to the reader on this subject. The writer says, "I recognize their (patent medicines) harm as any one may do if she cares to read the literature published by the United States government and the American Medical Association." A pertinent article on freight-rates, a subject which no one would suspect had a very intimate connection with health matters, shows that 16,000 of the 40,000 deaths in North Carolina last year were preventable, and that the 16,000 preventable deaths involved a loss of over $27,000,000 to the state; that of the 80,000 cases of illness in North Carolina last year 40,000 were preventable, and that this involved an additional loss of $18,000,000, or a total loss of $45,000,000, as the preventable health waste of the state for last year. The writer then continues, "When it is estimated that our state loses as much as $5,000,000 annually in excessive freight-rates we hold conventions and conferences, and we organize and call extra sessions of the legislature; but when we lose $45,000.000 worth of our best North Carolina citizenship no one gets excited, no one talks of an extra session. Why?" The writer then shows that the principal trouble is that the people do not realize the amount of the loss through preventable diseases and the fact that this is preventable. He assumes correctly that when these two facts are recognized by the people, "we will begin public health work in earnest. As it is now, there is practically no public health work done in over 85 per cent. of the counties in the state."

VERMONT BULLETIN

The *Bulletin of the Vermont State Board of Health* for September contains the proceedings of the fifteenth annual school of instructions for health officers, which has been recognized as a state institution for a number of years, the state paying the expenses of all health officers attending. Different topics were presented by officers of the United States Public Health Service and of the State Department of Health, followed by discussion of the duties of local health officers. Two hundred and thirteen health officers were present.

MICHIGAN PUBLIC HEALTH BULLETIN

Public Health, the bulletin of the Michigan State Board of Health, for September is devoted largely to articles on school hygiene. Charles F. Tambling of the Central State Normal School discusses "The Normal School in Sanitary and Civic Education." Charles McKinney of the Michigan State Normal School writes on "Sex Hygiene in the Public Schools." After discussing the question in general terms he summarizes the difficulties under four heads, namely, the opposition of present public opinion, the lack of teachers capable of giving suitable instruction at present, the lack of a well-thought-out and thoroughly tested course of study, and the objection to the teaching of sex hygiene in the elementary schools under present conditions. The first and the fourth objections are not especially weighty. The second and third, however, are deserving of the most careful consideration. The value or harmfulness of a course of instruction in sex hygiene or in any other subject in the public schools depends entirely on the carefulness with which a proper course of instruction is planned and on the ability and knowledge of the teachers who will have charge of the course. Even the most ardent advocates of teaching sex hygiene in the public schools must admit that as yet no carefully thought-out course of instruction, suitable for intermediate, primary and high schools has been prepared, and that in many cases the teachers are nearly as ignorant on this subject as are the pupils. McKinney says that until recently no special courses in sex physiology and hygiene were offered in any of the colleges or normal schools of the country; that only one normal college so far offers a course which would probably fit a person to teach this subject; that the literature on the subject, aside from controversal and propaganda pamphlets, is scarce, and that even what there is is of doubtful scientific value and decidedly emotional. McKinney strongly advocates the instruction of sex physiology in the public schools as soon as the right conditions can be secured, and outlines the following steps as necessary for this result: Continued agitation and enlightenment of the public regarding the social evil, the inauguration of proper courses in colleges and normal schools for the training of teachers in sex hygiene, the initiation of such courses in high schools before separate classes as a part of the course in physiology or physical training, and the extension of such instruction in the grammar and intermediate grades as fast as the courses and the teachers can be prepared for suitable instruction. McKinney's article is a thoughtful and conservative expression of opinion from one qualified to speak with authority. Other articles on "Rural School Hygiene," "Medical Inspection of Schools," "Schoolroom Cleanliness" and "School Water-Supply," make the number a particularly interesting one.

A CITY'S INVESTIGATION OF ITS PUBLIC HEALTH

The present interest in social and civic conditions in American cities is no longer confined to the larger cities, but is being taken up in smaller towns. The citizens of Newburgh, N. Y., wanted to learn the facts regarding their city and its administration. First proposed by a local minister and later by the local Associated Charities, a survey committee of fifty citizens was ultimately organized which asked the cooperation of the department of surveys and exhibits of the Russell Sage Foundation. With the cooperation of a number of public workers, investigations were undertaken in the public schools on public health, housing, delinquency, public library, recreation, industrial conditions and municipal administration, the survey being in each case carried on under the supervision of an expert in each branch.

The investigation in the public health situation in Newburgh shows the weakness of much of our municipal health organization. The report criticizes the *organization of the health* department, which consists of a board of seven members, with the health officer as the executive and servant of the board, instead of an expert administrator responsible for the work of the department. Another serious difficulty is the fact that the health officer is expected to give only an hour a day to the work of the department. One is not surprised at this situation when it is learned that Newburgh spends only 12 cents per capita per year for health purposes, or about 1 cent a month or a quarter of a cent a week to guard the health of each citizen. Certainly not much can be expected for this sum. The registration of births and deaths and the reporting of diseases is also criticized, more on account of the defects in the system than on account of personal shortcomings. Newburgh, it seems, is known as a "typhoid town," and the survey finds ample evidence to justify this designation. In the opinion of the inspector the presence of typhoid is entirely inexcusable and represents an economic loss to the city of about $40,000,000 a year. While the sewer system of the city is good, no one seems to know anything about the condition of the milk-supply, with the result that one infant out of every eight dies during the first year of life.

Tuberculosis, venereal diseases, medical inspection of schools, the lack of suitable hospitals, hospital equipment, street-cleaning, occupational diseases and other important subjects are also gone into in the report. The recommendation made is for a full-time health officer with a suitable salary and with proper authority and responsibility, with such assistance as he may need to organize and operate a modern municipal department of health. The report is summarized so that the issue is put plainly before the citizens of Newburgh, that the securing of a proper department of health and the prevention of diseases and the saving of life is simply a question of finance. The report on housing is also of interest from the public health point of view, covering lodging-houses, sewer connections, danger from fires, etc. The entire report is of interest as an example of the careful scrutiny to which all fields of municipal activity are now being subjected.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

COLORADO: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DELAWARE: State Society and Homeopathic, Dover and Wilmington, Dec. 9-11. Secretary of the Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

IOWA: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

KENTUCKY: Armory, Louisville, Dec. 11-13. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: Regular, 1211 Cathedral St., Baltimore, Dec. 9. Sec., Dr. J. McP. Scott, Hagerstown.

MINNESOTA: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.

NEW HAMPSHIRE: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.

NORTH DAKOTA: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, Dec. 9-11. Sec., Dr. Geo. H. Matson, State House.

OREGON: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

PENNSYLVANIA: Philadelphia, Dec. 2-4. Sec., Mr. Nathan C. Schaeffer, Harrisburg.

VIRGINIA: Richmond, Dec. 16-19. Sec., Dr. Herbert Old, Norfolk.

WASHINGTON: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

Correction of West Virginia July Examination Report

In the report of the examination held by the West Virginia Board in July, 1913, one candidate was reported as a graduate of the University of Louisville. A foot-note stated that information from the college did not indicate such graduation. A later report from the West Virginia Board states that the candidate should have been given as a graduate of the Chicago College of Medicine and Surgery.

Vermont July Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Examiners, reports the written examination held at Burlington, July 8-10, 1913. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 23, all of whom passed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Tufts College Medical School	(1909)	85.9
Albany Medical College	(1911)	81.7
Columbia Univ., Coll. of Phys. and Surgs., N. Y.	(1913)	91.4
University of Vermont (1911) 77.2; (1912) 80, 92.8; (1913) 77.5, 78.1, 79.5, 79.8, 80.1, 81, 81.7, 81.9, 82.1, 83.5, 84.9, 85, 85.6, 86.1, 88.1, 92.7.		
University of Naples	(1904)	80.2

LICENSED THROUGH RECIPROCITY

College	Year. Grad.	Reciprocity with
Baltimore Medical College	(1896)	Maine

Missouri June Report

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written and oral examination held at St. Louis, June 16-18, 1913. The number of subjects examined in was 14; total number of questions asked, 210; percentage required to pass, 75. The total number of candidates examined was 160, of whom 144 passed and 16 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
	(1911)	80.8
Howard University, D. C.	(1913)	87.1, 88.1
University of Illinois	(1912)	86.1, 89.6
Rush Medical College (1913) 87.2	(1912)	88.3
Chicago College of Med. & Surg.	(1913)	85.6
Hering Medical College	(1913)	87.2
Drake University	(1913)	86.2, 88.2
Tulane University, New Orleans	(1913)	87.3
Johns Hopkins University		

Harvard Medical School..........................(1900) 82.3
Barnes Medical College, St. Louis...............(1905) 75
Hahnemann Medical College, Kansas City........(1913) 84.7
St. Louis Coll. of Phys. & Surg...... (1909) 75; (1913) 76.8, 80.3
Nat. Univ. of Arts & Science, St. Louis........ (1913) 75.3, 77.8
Ensworth Medical College, St. Louis............(1913) 77.8, 86.6
American Medical College, St. Louis (1912) 77.2; (1913) 75, 75, 75, 75.3, 75.6, 75.8, 77.5, 77.9, 79.1, 79.5, 80.6, 82.4, 83.3, 84.3, 84.4, 85, 85.6, 86.5.
University Medical College, Kansas City (1913) 75, 75, 77.4, 78.4, 79.5, 79.9, 81.2, 82, 82.7, 83.2, 83.6, 83.9, 84.5, 85.1, 85.7, 86.3, 86.5, 86.8, 87, 87.3.
Washington University, St. Louis (1912) 83.2, 86.5; (1913) 75, 77.8, 79.2, 80.6, 80.8, 82.3, 82.3, 82.9, 83.6, 83.8, 84.1, 84.8, 85.2, 85.3, 85.3, 86.2, 87.1, 88.1, 88.4, 88.8, 88.9, 88.9, 89, 91.2, 93.3.
St. Louis University (1912) 81.8, 86.1; (1913) 75, 75, 75.5, 77.2, 77.6, 78.3, 78.5, 78.6, 78.7, 78.8, 79.2, 79.3, 79.7, 80.1, 80.5, 80.5, 81.2, 81.3, 81.3, 82, 83.1, 83.3, 83.3, 83.6, 83.6, 84, 84, 84.1, 84.2, 84.3, 84.3, 85.1, 85.1, 85.2, 85.3, 85.4, 85.6, 85.7, 86.2, 86.7, 86.8, 87.1, 87.3, 87.3, 87.8, 88.1, 88.1, 89.4, 89.5, 93.1.
Columbia University, Coll. of Phys. & Surg., N. Y. (1913) 85.3
Eclectic Medical College, Cincinnati............(1913) 89.3
Jefferson Medical College ....(1872) 75
Meharry Medical College..........................(1913) 82

FAILED

University of Arkansas ....(1912) 71.2
College of Physicians and Surgeons, Keokuk......(1893) 51.6
Ensworth Medical College, St. Louis.............(1912) 64.4
St. Louis College of Phys. and Surgs. (1913) 55.3, 59.1, 66.2, 68.1
American Medical College, St. Louis (1909) 58.2; (1912) 72.5; (1913) 67.6, 71.3.
University Medical College, Kansas City (1911) 62.6; (1913) 69.5, 72.
National University of Arts and Science........(1913) 72.3
Meharry Medical College..........................(1913) 62.1

Book Notices

MASSAGE. Its Principles and Technic. By Max Böhm, M.D., Edited, with an Introduction, by Charles F. Painter, M.D., Professor of Orthopedic Surgery at Tufts College Medical School, Boston. Cloth. Price, $1.75. Pp. 91, with 97 illustrations. Philadelphia: W. B. Saunders Company, 1913.

Considering the fact that literature on the technic of massage, particularly in English, is very rare one will acknowledge that the author is filling a want. The book is short, to the point and ought to be well received. There is first a chapter concerning general preparations and length of sitting, as well as definitions of the various manipulations; then well-illustrated chapters on the massage of joints, muscles, nerves and skin, abdomen and the general body massage. There are also a few anatomic pictures illustrating why it should be done just so. One might, of course, find reasons for difference of opinion. On page 38 there is a description and illustration (Fig. 21) of the way in which by raising the arm, one can get at the capsule of the shoulder-joint and manipulate it, in case it is thickened. Of late, writers on massage advise against vigorous manipulation in the axilla, as one might harm the brachial plexus, and we are inclined to endorse that opinion.

ANAPHYLAXIS. By Charles Richet, Professor in the Faculty of Medicine, Paris. Authorized Translation by J. Murray Bligh, M.D., Medical Registrar to the Liverpool Royal Infirmary with a Preface by T. R. Bradshaw, B.A., M.D., F.R.C.P. Cloth. Price 3 shillings 6 pence. London: Constable & Co., 1913.

To Richet belongs the credit of first giving to the profession a comprehensive account of the main phenomena designated by "anaphylaxis," the word coined by him to signify the opposite of protection or phylaxis. Because there appeared to develop an increased sensitiveness to a poison after previous injection of that poison this new word seemed quite appropriate. We now know, paradoxical as it may seem, especially in the light of the symptoms, that there is no actual increase in susceptibility to poisons in anaphylaxis, but an increase in the power of the body of the so-called sensitive animal to split the sensitizing protein into poisons. Failure to distinguish clearly between the original meaning of anaphylaxis and the real nature of the condition to which it is now applied is a serious obstacle to a clear understanding of what is written and said about this subject. This distinction must be kept in mind constantly in reading Richet's account of the various phases of anaphylaxis, or perhaps better allergy. All students of allergy will welcome this presentation of the subject by one who has contributed so much to our knowledge of it. Generally speaking, his views accord with those current in American and German literature. Only little effort is required to accommodate one's self to Richet's nomenclature. In places the statements are abrupt and even obscure, perhaps because of the translation; but examples of the masterly lucidity of the French are not wanting. The physician who is not already thoroughly familiar with the general facts in regard to anaphylaxis will find this a rather difficult book to understand, as the author frequently appears to assume a considerable knowledge on the part of the reader. It is annoying that there is no index and it is difficult to see why the bibliography in the English edition should have been limited to the years 1910, 1911 and part of 1912.

DIGEST OF COMMENTS ON THE PHARMACOPEIA OF THE UNITED STATES OF AMERICA (EIGHTH DECENNIAL REVISION) AND ON THE NATIONAL FORMULARY (THIRD EDITION). For the Year Ending December, 1911. By Murray Galt Motter and Martin I. Wilbert. Paper. Pp. 683. Hygienic Laboratory, Bulletin No. 87. Washington: Government Printing Office, 1913.

In the period covered by this, the seventh in the series of "Digests," the critical character of the comments on the German Pharmacopeia might be taken to indicate that the makers of pharmacopeias must in the future cater to a more and more discriminating constituency. This attitude on the part of users of pharmacopeias is still further emphasized by the growing demand for a limited materia medica and, by inference, the limitation of the scope of the pharmacopeia to substances of recognized therapeutic efficacy and substances which, to some degree at least, lend themselves to adequate standardization, whether chemical or physiologic. Coupled with this is the demand, now become international, for greater uniformity in the matter of nomenclature and of standards, together with the tests for purity and identity, and the method of making these tests, on which the standards are based. These tendencies are well reflected in this volume, nearly two-thirds of which is devoted to comments on official articles. The twenty pages or more devoted to the subject of clinical tests should prove a real aid to those physicians and pharmacists who have the time, the inclination and the facilities for clinical laboratory work, while a score of refences to the literature on disinfectants presage the coming of light and order in the somewhat chaotic field of modern preventive medicine.

BEHANDLUNG DER ANGEBORENEN UND ERWORBENEN GEHIRNKRANKHEITEN MIT HILFE DES BALKENSTICHES. Von Prof. Dr. G. Anton, Direktor der königl. Klinik für Geistes- und Nervenkrankheiten in Halle, a.S., und Prof. F. G. von Bramann, Direktor der königl. Chirurg. Universitätsklinik in Halle a.S. Paper. Price, 9 marks. Pp. 188, with 54 illustrations. Berlin: S. Karger, 1913.

In this monograph are described the underlying principles, the technic and the results, in a variety of cases, of efforts to relieve intracranial pressure by puncture of the corpus callosum. The clinical histories of the cases in which the procedure has been used, which represent hydrocephalus, hypophyseal tumors, tumors of the brain and cysticercus, are given in full. On the basis of the experience here recorded the indications, contra-indications and possible dangers of the operation are discussed. It appears that in inoperable intracranial tumor the pain and the distress of the patient may be greatly relieved by puncture of the callosum, and that good results have been obtained in other cases of intracranial pressure. The monograph consequently is of interest and importance to surgeons.

PROTECTIVE INOCULATION AGAINST CHOLERA. By W. M. Haffkine, Bacteriologist with the Government of India. Paper. Price, 4 shillings 6 pence net. Pp. 98. Calcutta: Thacker, Spink & Co., 1913.

The author gives an account of his work in the preparation of an anticholera vaccine and of its application to the prevention of cholera in India. This occupies the first two parts of the book. The third deals with the effects of devitalized "Cholera Vaccine II," as he calls his preparation of living cholera germs. He regards it as demonstrated that dead cholera germs will produce immune bodies in the human organism; but experience must show whether or not the preparation will protect man against cholera germs taken into the intestinal tract. Experiments to test this point should soon be made, since the greater convenience of the devitalized vaccine will render it much more useful than the living germs in immunizing large numbers of people.

WHAT HEART PATIENTS SHOULD KNOW AND DO. Suggestions for Persons Suffering from Diseases of the Heart and Blood-Vessels. Exercise, Diet, Prevention, etc., and Advice as to the Regulation of Their Lives. By James Henry Homan, M.D., Special Lecturer on Cardiovascular Diseases in the University of Georgia. Cloth. Price, $1.20 net. Pp. 204. New York: Dodd, Mead & Co., 1913.

The author has written a book of advice ostensibly for patients suffering from heart-disease, but its scope is so diffuse that it can be regarded as advice applicable to any one quite as much as to the sufferer from heart-disease. The book is best described by the following headings: "Relaxation," "Clothing," "Climate and Environment," "Exercise," "Diet," "Bodily Waste." Blood-Pressure," "Obesity," and the advice given by the author is conservative and good. It is not better than many books already on the market giving general hygienic advice, and the literary style is not so good as some of the others.

GRUNDRISS DER FERMENTMETHODEN. Ein Lehrbuch für Mediziner, Chemiker und Botaniker. Von Professor Dr. Julius Wohlgemuth, Assistent am Kgl. Pathologischen Institut der Universität Berlin. Paper. Price 10 marks. Pp. 355. Berlin: Julius Springer, 1913.

The purpose of this book is to describe clearly all the methods that have proved useful in the study of ferments. The intention of the author has been to meet the needs of the practical laboratory worker, and the directions are given with much care and detail with the view of helping those who are less experienced. In the general part the nature of ferments and the fundamental principles of their study are discussed in a clear and simple way; in the special part, the methods for the different classes of ferments are given. In view of the growing importance of the study of ferments in diagnosis, the book will interest all physicians who are in touch with the development of recent work.

Medicolegal

Breach of Contract to Furnish Employee Medical Attention

(Thomas vs. Tennessee Coal, Iron & Railroad Co. (Ala.), 69 So. R. 627)

The Supreme Court of Alabama reverses a judgment rendered in favor of the defendant, which was sued for damages for failure to furnish the plaintiff necessary medical attention when he became ill with severe cramps and pain in the abdomen, while in the defendant's employ. According to the plaintiff's testimony, which did not seem to be in any way contradicted, the defendant's agent assured him, when he entered the defendant's service, that for the payment of $1 a month, "in case that you or any of your family gets sick, why, the company doctors will give you service." It was not disputed that the defendant had in its employ at that time, and at the time that the plaintiff became ill and required medical service, a practicing physician charged with the duty of giving needed medical service to its employees at its plant at which the plaintiff was employed. The physician's contract with the defendant, however, was to serve employees and their families at their homes within a restricted territory only, whereas the plaintiff's residence, where he was taken sick, and where the physician was called on to visit him, lay a mile or more outside of that territory. Still it did not appear that the plaintiff was informed of this restriction, and it was not denied that the defendant deducted the stipulated fee of $1 a month from the plaintiff's wages as consideration for the medical service promised to him and his family.

It resulted, the court says, that, while the physician was not obligated to either the plaintiff or the defendant to render the service requested in this particular case, the defendant was none the less obligated to the plaintiff to have the physician do so; at least the contract between them was fairly open to that interpretation by the jury, and fairly open to the interpretation, also, that in case of need the company's physician should be summoned by a call made immediately on him, and not mediately through some other company official. For if the company's physician, provided for such an emergency as here arose, failed or refused to respond to the plaintiff's call, the plaintiff was certainly under no duty to wait and take the matter up with the company for negotiation and adjustment, and, perhaps, die the meanwhile of inattention and neglect, as it seems he would very likely have done.

So far as the defendant's obligation to the plaintiff was concerned, the limited service it required of its regular physician, the fact that that physician was under no duty to travel outside of a designated territory to serve the plaintiff at his need, was wholly immaterial to the case, in the absence of notice to the plaintiff of such a restriction when he was contracting and paying for a service not thus limited. It might, indeed, be reasonably presumed that for mere service at the plant or infirmary in case of injury he would not have chosen to pay the monthly fee; and, without informing the plaintiff of the stated restriction, the defendant had no right to take his money, and at the same time fail to provide for needed medical service to him at the hands of its regular physician.

This was the breach averred in one count of the complaint, and there was evidence before the jury to support it. The breach charged was a breach by the defendant, not by the physician, and the physician's refusal to attend the plaintiff was, in law, a failure by the defendant to discharge its duty to the plaintiff, namely, to arrange with its regular physician to attend him in sickness, and to actually effect such attendance by that antecedent provision. The trial court erred, therefore, in instructing the jury to find for the defendant, and its judgment must be reversed.

Construction and Validity of Law Prohibiting Obnoxious Disease and Deformity Exhibitions

(People vs. Kennedy et al. (Mich.), 141 N. W. R. 887)

The Supreme Court of Michigan affirms a conviction of the defendants under the Michigan statute entitled "An act to prohibit, discourage and punish the exhibition of deformed human beings, diseased or deformed human bodies, or parts thereof, or the representations of the same, for any other than purely medical purposes." The prosecution was under Section 2, which provides. "It shall be unlawful for any person or persons to so expose or exhibit in museums or elsewhere diseased or deformed human bodies, or parts thereof, or representations of the same, which would be indecent in the case of a living person, except as used for scientific purposes before members of the medical profession or medical classes."

It appeared that the defendants were engaged in the practice of medicine in the city of Detroit and occupied the three upper floors of a building. At the entrance to their offices was a sign reading, "Doctors K. & K. Museum." On the upper or fourth floor, contained in cases, were representations, in wax or other substance, of portions of human bodies of both sexes described within the prohibition of the statute. The complaining witness, on application, went up in company with the defendants' office boy, who, under the direction of the defendants, occasionally took people up to the fourth floor, opened the door for them, and turned on the light. Those taken up by him were always adults and only one at a time. The defendants contended that for years this collection had been stored in the attic of another building not accessible to anybody; that, after they occupied their present location, they moved it from the attic, had the different pieces painted and mounted, and placed them on this top floor "so that they could be seen favorably, in case we wanted to sell them"; that they tried at different times to make a sale; that they were not exhibited to the public. One of them testified. "We do not exhibit this stuff to the public. Once in a while if a person calls, we send them up. Sometimes we refuse people."

It was argued that Section 2 is unconstitutional because not within the scope of the title of the act, and because the offense charged in that section is not embodied in the enacting clause. But, the court says, as appears from the entitling of this act, it is a police regulation clearly within the power of the legislature, and was enacted to prohibit, discourage and punish the exhibitions therein described. The objection was without merit for the reason that the exhibition of the representations of the parts of the human body prohibited by Section 2 of the statute charged and described in the complaint was clearly within the terms of the entitling of the act. The exhibition prohibited by this section of the statute might be either public or private and includes an exposure to a single individual.

The construction of this portion of the statute is one of first intention before this court, and it will be proper to say that the defendants' contention was that the legislative intent in this statute was to prohibit the exhibition in public of the prohibited subjects, with or without charge, and that the words "exhibition," "expose," and "exhibit" should be construed in harmony with such intent, and the jury should have been so instructed. But the court does not think that Section 2 should be so construed. The legislature intended by this section to prohibit the exposure of these subjects in public or in private to any person or persons, "except as used for scientific purposes before members of the medical profession or medical classes." In the court's opinion it is a statute enacted in the interest of morality and decency. The terms of the statute are not technical, and the words used should be given their ordinary and usual meaning.

Society Proceedings

COMING MEETINGS

American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Southern Surgical and Gynecological Assn., Atlanta, Dec. 16-18.
Western Surgical Association, St. Louis, Dec. 19-20.

CHICAGO MEDICAL SOCIETY

Regular Meeting, held Nov. 12, 1913

The President, DR. CHARLES P. CALDWELL, in the Chair

Relations of, and the Lesions Produced by, Various Forms of Streptococci, with Special Reference to Arthritis

DR. E. C. ROSENOW: About a year ago I became interested in the question of the transmutation of the pneumococci and streptococci, or the various organisms of the streptococcus group. It had been known previously that certain streptococci may take on cultural features and other properties quite different from those they had when first isolated. Indeed, the form of endocarditis which we have known clinically as chronic septic endocarditis is caused by a streptococcus, the so-called *Streptococcus viridans*, which by animal passage can regularly be converted into pneumococci. It is generally considered that the *Streptococcus viridans* is an intermediate organism between pneumococci, on the one hand, and streptococci on the other. I felt that it might be possible for a typical pneumococcus, for instance, to be converted into a typical streptococcus, and this has been done. The transformation is so complete that I have no hesitation in saying that if a bacteriologist can differentiate a typical pneumococcus from a typical streptococcus, then it is possible to transform one into the other, and as we transform pneumococci into streptococci there are intermediate states and intermediate organisms. At a certain stage in the transformation of one organism into another — the hemolytic streptococcus, for instance, into the *Streptococcus viridans* — it behaves culturally and looks like the *Streptococcus viridans*, when injected into rabbits it will produce the lesions more or less characteristic of that organism, producing a typical endocarditis, and that of a type similar to the one produced by the organism as isolated in the case of the chronic septic endocarditis. When you increase the virulence of this organism somewhat, it will take on cultural and other features resembling the organism isolated from cases of rheumatism, and as you increase its virulence still further it will take on the characteristics of a pneumococcus.

We know that hemolytic streptococci have a marked affinity, experimentally, for the joints of animals, and we know, too, that it is likely that hemolytic streptococci have a marked affinity for the joints in man. A typical hemolytic streptococcus was isolated originally from a case of tonsillitis. That organism, when injected into animals, showed a marked affinity for the joints, producing an arthritis repeatedly. A blood-vessel had in it a clot containing rather a large number of streptococci. An animal was injected intravenously with another strain of hemolytic streptococci, and when it was killed five days later a multiple arthritis of the suppurating type was found. A section of the synovial membrane taken from the neighborhood of the plica showed a thrombosed vessel containing round cells, with streptococci in the blood-vessel as well as in the surrounding tissue.

In another experiment, the first strain of organism, a hemolytic streptococcus, was transformed into a *Streptococcus viridans*. Instead of having the single coccoid forms in the chain, there was a tendency to chain formation, and a marked tendency to form in clumps. This hemolytic streptococcus was converted into *Streptococcus viridans* in the test-tube by simply placing it in symbiosis with the *Bacillus subtilis*. When it acquired this morphology, it acquired, when injected into an animal, features and the affinity for the heart-valve instead of the joint, producing now the same organisms repeatedly, and hemorrhage in the heart-valve and endocarditis, without producing arthritis.

A man had had an attack of articular rheumatism. He suddenly began to have severe muscular pain all over the body, with distinct localizations in various muscles, the intercostal muscles especially, the flat muscles of the skull, the occipitofrontalis, and the muscles of the shoulders. He had a beautiful lesion in the supinator longus and also in the biceps, in each instance within the tendon sheath. A cross-section of the biceps muscle showed the striation of relatively normal muscle with round-cell infiltration and hemorrhage, and a nodule somewhat larger than we find in the animal, but very typical. That is not only evidence of a real myocarditis, represented here in a man, but from this area the same organism reproduced myocarditis in a rabbit, and the organism was again isolated from that rabbit.

This affinity for these various structures is not merely accidental; it is certain. When the rabbit has acquired that affinity it is so marked that you can inject half a dozen animals with varying doses of bacteria and have a number of lesions produced in proportion to the size of the injection. Moreover, you can inject that same strain of organism and pass it through one animal, and in the next passage it will probably produce a few muscle lesions, or none at all, and after the second and subsequent passages you can do what you will, but you cannot produce a muscular lesion. The facts are that at certain stages of morphology, chemistry, or what not, these affinities for localization are absolute and very distinct.

We have discussed the marked and really characteristic affinity of hemolytic streptococci for joints—the evidence in man. The evidence, experimentally, is complete. We have shown that the organisms isolated as *Streptococcus viridans* have a marked affinity for the heart-valves, producing clinically that form of endocarditis that is so fatal, the chronic septic endocarditis, and a fatal endocarditis in rabbits. We have shown that the *Streptococcus rheumaticus* has the same affinity, but in no instance producing the lesions so badly as in the others.

These organisms have an affinity for other structures of the body—the mucous membrane of the stomach of a dog, which shows a large area of necrosis forty-eight hours after an intravenous injection of streptococci; the mucous membrane of a rabbit's stomach showed a beginning ulceration forty-eight hours after injection.[1]

Experimentally, the ulcers which I have produced by the intravenous injection of these organisms resemble more the type of ulcer seen in man than has been noted by other observers. The possibility of ulcer of the stomach in man being infectious, and the evidence that ulceration in the duodenum or stomach may have its origin as an infection, surely is suggested by results of this kind. I have made cultures from ulcers in man, and in two of those ulcers I was able to isolate streptococci, not from the surface, but from the depths of the ulcer. In one of these the affinity for the mucous membrane of the stomach in dogs was more marked than any other, producing a most beautiful ulceration in the stomach, and a slight, low-grade enteritis, and that was all the dog had. In the animals in which these organisms produced ulceration of the stomach the most common associated lesion was a cholecystitis, and beginning gall-stone formation. When the organism of rheumatism is injected, it is common to obtain marked ulceration and inflammation of the appendix in addition to the joint lesion. The organism from articular rheumatism has never produced ulceration of the mucous membrane of the stomach until it has been passed through a number of animals.

Owing to the cooperation of Drs. Mayo, Bevan and Ochsner I have been able, in conjunction with Dr. Sanford, to study the bacterial flora of four chronic duodenal and gastric ulcers, together with the regional lymph-glands in one. The number of colonies of organisms were very few, staphylococci being the predominant organism. In two cases, however, we obtained streptococci and one of these showed an affinity for the stomach mucous membrane of rabbits and dogs which was very striking. These results are very suggestive of the work which may be accomplished if surgeons will cooperate to furnish clinical material for study of this nature.

The affinity for the stomach mucous membrane is great; the affinity for the mucous membrane of the gall-bladder is also great. The production of inflammation of the gall-bladder is not always, I am absolutely sure, an expression of the bile, secondarily infecting the gall-bladder, but it is an inflammatory process just as in the heart-valve and in the joint, proving absolutely that the mode of origin in some instances, in which the conditions were ripe, was embolic, and that the bile was infected secondarily from the nodular inflammation in the mucous membrane and the ulceration.

One of the lesions that is most common about this grade of virulence, although a little higher virulence is more favorable, is the picture of an ascending pyelonephritis. I shall never have any trouble in the future, after seeing the results of these experiments, in explaining where the infection comes from in a patient with gall-stones who has not the history of typhoid, and I shall no longer have any trouble in satisfying myself where the infection comes from that forms the nucleus of a mural renal stone. I feel that the question of ulcer of the stomach and duodenum is entirely within control by proper methods, and that surgeons must come to our aid.

Clinical Aspects and Medical Management of Arthritis Deformans

Dr. Frank Billings: The beginning of this work on joints started with an investigation of chronic infectious endocarditis, when the *Streptococcus viridans* was discovered in the circulating blood of patients suffering from this disease; but with such a worker as Dr. Rosenow that organism soon was chased down to a pneumococcus, and the report which I made at Atlantic City about seven years ago followed. These cases were reported as pneumococcus endocarditis, which was disputed by Eastern men and others, who said that we had made a mistake; but subsequent reports and Dr. Rosenow's report to-night prove that the work done in those days by him, that of the transmutation of *Streptococcus viridans* into the pneumococcus, was correct. Following that came the work on the joints, and we have gained a knowledge of arthritis deformans that we have not had before.

Chronic arthritis with deformity is, in my opinion, primarily of infectious origin. Usually the infectious micro-organism is a streptococcus. The work of Rosenow shows that the cultural and pathologic characteristics of the streptococcus may be changed by varying the culture-medium and by serial animal inoculation. The occurrence of chronic infectious endocarditis due to the *Streptococcus viridans*, the acute arthritis rheumatica of chronic arthritis due to a streptococcus, of myocarditis, acute and chronic, due to still another strain of the streptococcus modified from strains of other streptococci by varying the culture methods, seems to show that the mutation of these strains may occur in the animal or man at the point of focal infection. It is an important principle, not yet absolutely proved, that an organism can be transformed in cultural characteristics and pathogenic quality in the test-tube and by passage through animals, and is suggestive that the same organism in man, focally situated, may change and produce various lesions, in one endocarditis, in another acute arthritis, in another myocarditis, with or without chronic arthritis of a deforming type.

Confusion has arisen from the attempt to classify deforming joint disease anatomically. In the same patient one may find varying anatomic changes, these depending on the source of the blood circulation of the joint, in part, and apparently, also, on the resistance of the tissues to the infectious agent, and, finally, to the degree of virulence of the micro-organism infecting the tissues of the joint. The circulation to the joint structures consists of three separate systems: that to the periarticular structures, that to the synovial membrane and its reduplication, and that to the medulla of the bone in the shaft. This explains the variety of anatomic changes which occur in any form of chronic arthritis. If you will examine these patients carefully, you will sometimes find all types in one individual, but not in all. Practically all patients with deforming arthritis suffer from chronic myocarditis with interstitial overgrowth, and consequently contraction. Heretofore this muscular contraction has been thought to be due to nervous influence, or a secondary event in chronic arthritis, due chiefly to the posture of the limbs involuntarily assumed to relieve the pain in the joints. This is true in some instances, or in part in all possibly, but in arthritis deformans the shortening occurs in muscles when near-by joints are not involved. Culture yields in many instances micro-organisms of a streptococcoid type. It is our opinion that these are the cause of myositis and will probably prove to be mutation forms of the streptococcus organism found in the tissues and nodes of arthritis deformans.

In addition to the primary infectious origin of the invasion of joints and muscles in arthritis deformans, there is unquestionably an associated, probably secondary, change in metabolism which intensifies the anatomic joint changes, and is further manifested by a general nervous irritability, frequently a secondary anemia, loss of weight, disturbed digestion, etc. In part, the poor general nutrition is due to the protracted illness, with deprivation of proteins, and lessening of the general strength by hot baths, and by too much irrational drugging. In addition, there are metabolic changes in bones, cartilage and ligaments, and in the muscle tendons, which we do not understand. The best example is the poker-spine of a spondylitis deformans, which has been compared with the melted tallow which flows down and hardens on the candle. Possibly, future study may explain this, and also that these metabolic processes are set up as a reaction to the bacterial toxins.

Therefore, I would consider arthritis deformans as a clinical entity based on the established proposition of the existence of a chronic focus of infection due to a streptococcus which is usually located in the faucial tonsil or in the antra of the head, or in the jaw, related to the alveolar processes, or more rarely the gall-bladder, appendix, prostate or elsewhere. The streptococcus is isolated from the infectious focus and is susceptible of mutation in cultural characteristics and pathologic effects. Finally, there is an associated chronic myocarditis, apparently due to a type of streptococcus that has no affinity for the muscles. I think that this clinical entity due to the streptococcus may be differentiated from other infections of chronic arthritis, if one keeps in mind the characteristics which I have mentioned.

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[1] See article this issue, p. 1948.

Gonorrheal arthritis and especially spondylitis due to the gonococcus may be difficult to separate from arthritis deformans; but the gonococcal focus may be located in the urinary tract, the prostate or more frequently in the seminal vesicles, and thus settle the question. I have never seen the Neisserian organism cause a myositis.

The first step in the treatment is a thorough investigation of each patient. An attempt must be made to find the focal cause. While I believe that the faucial tonsil is more frequently the seat of focal infection than any other point in the body, still a thorough examination must be made of the sinuses, the teeth, the jaw and the pelvic organs as to the possible presence of a chronic focus of infection in the gall-bladder or appendix, and in the event of gastro-intestinal diseases, associated especially with stasis of the intestinal contents, a study of the feces as to the intestinal flora should be made. If the patient has suffered from frequent attacks of tonsillitis, if the tonsils show infected crypts, even though they be small, they should be removed. A large fibrous tonsil rarely causes the trouble. It is the small tonsil, usually, that contains the infectious organism in an obstructed crypt or an abscess cavity. My point is not to limit the investigation to the tonsil, but to search for the possible focus of infection elsewhere. If none is found elsewhere, it is my opinion that the tonsils should be removed, even though the history is negative to attacks of tonsil disease.

The aid of the orthopedic and general surgeon is frequently necessary to correct deformities due to contracted muscles, and in the application of proper temporary braces, etc. The surgeons have even restored dislocated joints for us and stretched the contracted muscles by putting on splints. The hygienic management does more than any other one thing to improve the patient.

Finally, immunity is still further established by the judicious use of autogenous vaccines, repeated every five or six days, in doses varying from 50 to 200 million. We used to employ larger doses, but experience showed quite as good results from the use of smaller doses without some of the disadvantages of excessively large doses. I have yet to see one patient who suffered from arthritis deformans improve under treatment with stock vaccines. This is probably due to the fact that the source of the infection has not been searched for and removed.

Arthritis deformans is an infectious entity. There is a varying degree of joint involvement, sometimes proliferative or hypertrophic, sometimes degenerative or atrophic. In practically all patients there is a chronic myositis, sometimes quite generalized. Practically always there is a general debility, a malnutrition, and probably a secondary faulty metabolism. The focal infection which may give rise to arthritis deformans is usually located in the head, but may be located elsewhere in the body.

The treatment and management must comprise: (1) the removal of the cause; (2) improvement of the general condition of the patient and resistance to the infectious organism by a personal hygiene, including good food, pure air, rational calisthenics and graduated exercises, with cheerful environment, and (3) the use of autogenous vaccines. The treatment of such cases should be carried on in a hospital in which team-work of the staff may be used for the investigation and removal of the cause, and subsequent treatment, both medical and surgical, may be carried out.

Etiology of Biliary Tract Infections and Their Relations to Duodenal Ulcer and Appendicitis

Dr. Charles L. Mix: The blood-supply of this region has something to do with the distribution of the lesions. The superior mesenteric artery is the supply of the appendix, and the region of the pylorus is supplied by the hepatic artery primarily, and that branch known as the superior pancreaticoduodenal. This one artery supplies both the gastric and the duodenal side of the pylorus. It supplies that part of the pylorus which hangs free in the gastrohepatic omentum, or, rather, fastened to it by the hepaticoduodenal ligament. This one artery supplies, therefore, that portion of the stomach which is the site of the ulcer, and it is not at all unlikely, in accordance with the embolic theory, that the emboli may enter on either side of the pyloric line, or in it. They may pass into the pyloric branch of the hepatic, but it is more likely, since the pathway of infection is more straight through the gastroduodenal, that they may pass straight down that pathway in somewhat the same manner as infection passes up, as a rule, to the left side of the brain from the arch of the aorta in cases of cerebral embolism.

The lymphatic supply of this region also merits attention. The appendix has coming from it two sets of lymph-vessels, or, one might say, three. There are in all of the mucous membrane structures two sets of main lymph-vessels. These have not been described until recently. One of these lymph-vessels, and a very important and somewhat disregarded one, is that which runs in the mucous membrane itself, and is so near the surface of the mucous membrane that it for a long time escaped attention. The next set is that which runs in the submucosa, and then outside of that, beneath the peritoneum, is another subserous set of lymph-vessels. These three sets are more or less distinct from one another. Coming from the appendix, therefore, is a set of currents which may ascend into the cecum, and then up the colon, in this mucous layer of lymph-vessels, or we may have the lymphatic current passing along the subserous surface, but along the colon, giving rise to certain cases of inflammation and extension of peritonitis, localized, sweeping up along the cecum toward the ascending colon, and producing numerous adhesions.

In the region of the duodenum, pylorus and stomach there is the same set of lymph-vessels. The mucous lymph-vessels are directly continuous through the pylorus, so that the gastric mucous lymph-vessels, the pyloric mucous lymph-vessels and the duodenal mucous lymph-vessels form one system. There is a similar system in the muscular and another in the subserous coats. These all make their way into nodes which pass up first along the gastroduodenal artery and then to the lymph-vessels, and from there to the transverse fissure of the liver, and the disturbance is apt to localize at the entrance of the portal vein, especially in cases of specific infection. There is one fundamental lymphatic law which can be adhered to, and that is that infection follows the lymph-vessels not into organs, but from organs toward other structures; also in all tubular structures, that is, in all ducts, in the body coming from glands this same law holds. You find them in the urethra and running to the bladder and the ureters to the kidney. Then, the lymphatic currents from the ductus choledochus run up to the hepatic duct and then to the liver, and those of the gall-bladder run through the cystic duct toward the common duct. Of course, it is possible that infection may be carried along this lymphatic system.

Every surgeon knows that these various regions are frequently related to one another. Often in operating for stomach or duodenal ulcer foci of infection are found in the appendix or gall-bladder, and frequently in the pancreas. Ochsner has reported that in 35 per cent. of his gall-bladder cases he has found an infected appendix. Kehr of Germany has removed the appendix in a large number of his gall-bladder cases.

As to the origin of duodenal and gastric ulcers, he believes that the theory of contact ulcer is very true. Contact ulcer is undoubtedly an embolic process. The work of Rosenow is rather conclusive as to the origin of these ulcers by the embolic process.

Up to about three years ago I was not a believer in the general statement made by many patients with duodenal ulcer that their attacks came on more particularly in the spring and fall. I have questioned many, and have found that duodenal ulcer is a disease more prevalent in the fall. Why is this so? The work of Rosenow is to some extent an answer. It is because of the possibility of a generalized infection in the body at certain periods of the year. Those due to the *Bacillus coli communis* probably will not be found to have any particular relation to any period of the year.

The same possibilities are present for infections of the biliary passages. There may be either a cholecystitis and a cholangeitis arising together, which is probably a frequent occurrence, much more so than we think, or the cholecystitis may follow the cholangeitis, or vice versa. The origin of these infections bacteriologically has been found to be due in the great majority of cases to two germs, *Bacillus coli communis* and *bacillus typhosus*. A Japanese observer has reported that 17.9 per cent. of his cases were due to other parasites instead of bacteria. The relation of gall-bladder disease to pregnancy I shall merely mention. It is probable than an element of biliary stasis in corset-wearing enters into consideration in these cases, because of the discrepancy of gall-bladder disease among Japanese women, 3 to 2 among men, and in Europe and America as 12 to 3 between women and men.

Another interesting point in connection with gall-bladder infection is incidence as regards advanced age. Old men are far more apt to have gall-bladder disease than the younger. At 70, the chances are even. That, of course, is due to the fact that the longer one lives the greater are the chances of acquiring some sort of infection.

The most common preliminary diseases which may lead up to trouble with the gall-bladder are: (1) typhoid fever; (2) influenza; (3) rheumatism, and then various forms of disturbance of the bowel, malaria, syphilis and peritonitis.

It is difficult to account for the spread of infection from the appendix to the gall-bladder; the portal blood is the only possible method, and it is only the chronic cases that produce this infection. There is one other possible source of infection, and that is a direct absorption of the blood-stream in the appendix, with consequent infection of the walls of the gall-bladder and liver directly. One point regarding the appendix: Chronic disease of the appendix does promote duodenal stasis, and with that you have an excellent chance for the development of a large number of germs; but the way of infection through the common duct and the liver I do not believe in at all. The simultaneous development of gall-bladder and appendix disease will probably take place, if it does take place, through the blood-stream. It cannot take place in any other manner. It is possible, but not probable, that infections of the gall-bladder take place by way of the portal tract. A great many men think that the infection is straight up the common duct. Dr. A. O. J. Kelly, in December, 1905, stated that infection does not, contrary to the opinion at that time, ascend directly from the duodenal and gastric area through the common duct into the liver, and there are good reasons for accepting this. Infection never takes place by bacteria going against the stream. If it cannot take place against the stream in the lymph-vessels, how can it take effect against the stream in cases of the ureter, or the common duct? It cannot do it.

Bond, of Leicester, England, has conducted a remarkable series of experiments which have been repeated and found to be true. He discovered that in vesical fistulas, indigo blue placed at the opening of the fistula below can be found afterward traveling up the urethra and appearing at the meatus. He said that it was not a capillary affair, because it did not appear in dead tissue, only in the living.

Surgery of These Lesions

Dr. John B. Murphy: The experiments of Dr. Rosenow give us a new light, a clearing up of the connection between the primary infection manifestations and the secondary metastatic lesions. The surgeon's role in this class of case is necessarily small, but in 1902, when we first insisted that these arthritides were metastatic manifestations of infections in other positions in the body, it was considered very doubtful that that would be finally sustained; but we were positive, because there was such a clean-cut definite relationship in the cycle of metastases between the primary infection and the secondary manifestation in the way of an arthritic inflammation. When you see in a ward two, four, six, eight or ten of these cases with secondary joint manifestations, and in each case you can trace it back to practically the same position in the body, a chronic lesion of a definite type, you cannot fail to accept the primary lesion with the secondary lesion.

In the early fall we have our annual crop of spondylitides, each patient describing his attack in the same way, associated with types of infection of the same character, and giving fixation of the spine which looks as though the parts had been cemented together. The ossification which cements these bodies together is merely a continuation of the embryologic process of ossification in the joints of the long bones, and that deposit is taking place in the connective tissue. Finally, you have a solid, compact, bony mass, a complete ossification. All of that forced us to believe and insist that the primary lesion was an infectious one, and that the secondary lesion in the shaft was purely a metastatic manifestation of it. Then we asked ourselves, What rôle can the surgeon play? Dr. Billings has suggested to-night that the surgeon can restore the dislocated joints. That is not to be the rôle of the surgeon. We have insisted that the arthritides have a definite surgical local treatment. Furthermore, as the disease advances our limitations become more and more pronounced until there is nothing to do but the crude carpenter-work of reconstruction. But in the early stage of the disease there is a local treatment, a surgical treatment, and up to the time of the vaccine treatment it has been the only treatment that has availed anything.

What do you find on looking into these joints after an acute infective process has passed? Often just a local area of necrosis or ankylosis, no larger than a nickel. That is, in cases in which the manifestation is associated with an infection and the "rheumatism" is not initiated by a chill. When the "rheumatism" is initiated by a chill, which shows the virulence of the infection, whether due to a mutation of the diplococcus or to what we have no certain knowledge of, we have learned that an ankylosis in the whole of the joint is the rule, great enough to destroy, not the small area, but all that synovial membrane.

By means of experiments with the possible neutralization of the virulence of this material we are hoping to find some medicament which will destroy that, but until this is found let us take advantage of what we know in the way of stimulating phagocytosis. Thirty years ago Carlos by injections produced abscesses in different parts of the body which were known as concentrating abscesses. His clinical observation showed nothing at all about phagocytosis. He found that if, in an acute infection of the knee, in the hip or in some portion of the body a local abscess is produced, a rapid subsidence of the fever will result, and the patient will rapidly recover. What did that mean? It meant exactly what I can demonstrate any day, that injecting 20, 30, 40 or 50 minims of turpentine under the skin causes an abscess to form rapidly, and while it is forming there will be a great increase in general leukocytosis, and any infective process will be influenced by the formation of the abscess, which, you understand, is not a microbic, but a chemical abscess, which produces a constitutional leukocytosis.

What can we do in regard to the joints? Two things. We can stimulate the local resistance in the acute infections by producing an infiltration of the tissue within the joint. We can stimulate constitutional resistance by injecting into the joints something which causes not only a local increase in the polynuclears in the joint, but also a constitutional increase. During the inflammatory process the intra-articular pressure may be prevented by making extension. If we can do this, we shall stop the destruction in the joint or limit it to a very marked degree. We have demonstrated that again and again. Can we do this thing with the chronic varieties of infection? No. But we can do something with them. During the inflammatory process luxation must not be permitted to take place and deformity must not be permitted to occur. It is not necessary that deformities should occur. I feel that the treatment of joints is a prophylactic one, and not a therapeutic one—the joints must not be permitted to deform in the beginning, and then we shall not need to operate later to correct deformities.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

Fourth Annual Session, held in Chicago, Nov. 10-15, 1913

(Continued from page 1929)

Further Observations on Chronic Intestinal Stasis

Sir Arbuthnot Lane, London: One case taught me how a patient may lead an active and happy life with only a small portion of the jejunum left after operation. In this case I removed a large portion of the jejunum, after which the patient gained rapidly in weight and strength. Several patients have attempted suicide on account of chronic intestinal stasis, and in all such cases the removal of the large bowel has restored the sufferer, not only physically, but mentally. In 106 cases in which I have performed the short-circuiting operation for chronic intestinal stasis, there have been four deaths.

Relation of the Ductless Glands to the Work of the Surgeon

Dr. Roswell Park, Buffalo, N. Y.: The internal secretions, so often spoken of as hormones, exercise an apparently controlling influence on many of the organs and functions, not alone on the ordinary bodily functions, but also on the nutrition and regulation of individual organs and their particular activities, even to the extent of becoming responsible for the development of certain mental traits or personal characteristics which may make or mar the individual, and may thus affect both his physical and intellectual welfare.

The hypophysis is a persistent organ and, therefore, must have throughout life a continued function. Extracts of the whole gland increase blood-pressure, cause uterine contraction, increase peristalsis, lower carbohydrate assimilation, and have a mydriatic effect. Used to excess they cause emaciation, degeneration of the liver and increased metabolism. Extirpation produces in animals a peculiar cachexia, reduced pulse-rate and respiration, fibrillary tremors, and death from apathy and coma. The overgrowth of the pituitary sometimes occurring after typhoid is to be considered as the result of toxins which stimulate its growth, as well as perhaps that of the epiphyseal bony borders, thus accounting for excessive overgrowth after this fever. Something of the same kind is often seen after marriage, when the stimulation of the sex glands seems to extend in a short time to the hypophysis.

The thyroid was once regarded as a reservoir, by means of which blood-pressure in the brain was equalized. It seems to have an influence on the formation of the blood, slightly resembling the action of the spleen, possibly vicariating for it. Its most important task appears to be elaboration of iodothyrin. Certainly iodin is its most important constituent, and in this the thyroid is richer than any other organ.

The parathyroids have only within late years been given their proper consideration. It is generally believed that nearly all cases of tetany in man are of thyroidal origin, and due to defective function and consequent evidences of hypoparathyroidism. The thymus seems to have much to do with the development of the entire bony system; when its activity is reduced ossification is much interfered with, and sometimes it fails utterly.

A Summing-Up of the Goiter Question

Dr. Charles H. Mayo, Rochester, Minn.: Various enlargements of the thyroid are the result of temporary excessive physiologic demands, as at puberty, pregnancy, infection, menstruation, etc. Many goiters of the simple and mild exophthalmic type undoubtedly recover spontaneously and, in many instances, various forms of medical treatment may hasten the recovery and restoration of the gland to an apparently normal condition. Simple goiters of long standing are often thrown into degeneration by giving iodin, causing thyrotoxicosis but not exophthalmos, although some symptoms are the same in these two forms of toxic goiter. Encapsulated adenomas and simple colloid goiters which have resisted treatment are in most instances best treated by removal of enough of the gland to remove the disease. In simple goiter the more enlarged lobe should be extirpated; encapsulated adenomas should be enucleated and thyroids which are bilaterally enlarged should have double partial resections with division of the isthmus. Exophthalmic goiter is essentially a disease chronic in character, presenting exacerbations and ameliorations of symptoms extending through a period of months or several years. While this disease is amenable to surgical treatment by the removal of a large part of the hypersecreting gland, this procedure should by no means be considered emergency surgery, and during exacerbations all cases should be considered medical. Surgery is indicated during the upward wave of improvement. Extreme conditions, especially dilatation of the heart, may require preparation medically before instituting operative interference, and this should be confined to a preliminary ligation of the left upper pole. Should reaction follow this, ligation of the right upper pole is indicated a week later and thyroidectomy reserved until the patient has gained in weight and general health. Otherwise thyroidectomy is made at a second operation.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

November, CXLVI, No. 5, pp. 625-780

1 Clinical Features of Cases of Subacute Bacterial Endocarditis That Have Spontaneously Become Bacteria-Free. E. Libman, New York.
2 Noguchi Luetin Reaction in Syphilis. G. B. Foster, U. S. Army.
3 *Dorsal Percussion in Enlargements of Tracheobronchial Lymph-Nodes. J. C. Da Costa, Philadelphia
4 Transmissibility of Lepra Bacillus by Bedbug (Cimex Lectularius L.). A. J. Smith, K. M. Lynch and D. Rivas, Philadelphia.
5 [illegible] Autopsy Findings in Two Cases. O. [illegible]
6 [illegible] Diagnosis and Treatment, with Reference to Laboratory Methods. B. A. Thomas, Philadelphia.
7 *[illegible] of Case of Bronchial Asthma. L. F. [illegible]
8 [illegible] (Pseudohypertrophic Muscular Dystrophy in Combination with Degeneration in Central Nervous System). C. D. Camp, Ann Arbor, Mich.
9 *Two Instances of Chronic Family Jaundice. A. H. Hopkins, Philadelphia.
10 Clinical and Metabolic Studies of Case of Hypopituitarism due to Cyst of Hypophysis with Infantilism of Lorain Type (So-Called Typus Froehlich or Adiposo-Genital Dystrophy of Bartels). D. Stetten, New York, and J. Rosenbloom, Pittsburgh.
11 Diagnosis of Gastric Ulcer. J. R. Verbrycke, Washington, D. C.

3. Dorsal Percussion in Enlarged Tracheobronchial Lymph-Nodes.—The eighteen case histories taken as the basis of Da Costa's report were selected from a series of thirty-eight mediastinal cases which afforded definite vertebral percussion findings. They represent, he says, typical examples of these signs, depending wholly on the adenopathies in question and not on the limited pleuropulmonary lesions coexisting in a few instances. No case of enlarged bronchial lymph-nodes associated with some other large mediastinal mass (i. e., carcinoma, fibroma, gumma) has been included in the summary, in order to rule out, so far as possible, extensive neoplastic tumors as potential factors of the spinal changes noted.

The individual vertebral physical signs of the eighteen tracheobronchial cases are summarized and charted according to the following groups: 1. Interscapular dulness, above the level of the inferior scapular angles, or over the first seven thoracic spinous processes. 2. Intrascapular dulness, below the level of the inferior scapular angles, or over one or more of the five lower spinous tips. 3. General thoracic hyperresonance over the entire thoracic segment. 4. Normal percussion signs over the entire thoracic segment. In simple enlargement of the tracheobronchial lymph-nodes percussion of the thoracic vertebrae, especially above the level of the inferior scapular angles, usually affords tonal changes of real clinical value if properly interpreted. These changes, more often corroborative than primarily diagnostic, invariably should be correlated with the mural signs of the individual case.

Hyporesonance with maximum tactile resistance and hyperresonance with minimum tactile resistance, Da Costa claims, may have precisely the same significance in uncomplicated adenopathies. To explain this seeming paradox it is to be assumed that in the former instance the mass exerts a dulling pressure, and that in the latter it conducts the predominant tracheal tone. In nodular enlargements associated with pleuropulmonary lesions, emphysema and pleural adhesions are to be reckoned with as additional factors of hyperresonance and hyporesonance, respectively. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect the vertebral percussion sound to a minor degree and more often produce dulness than hyperresonance. This general rule has a restricted clinical bearing in differentiating adenoid and malignant tumors. In routine examinations, Da Costa prefers ordinary mediate finger percussion to instrumental pleximeter percussion in studying vertebral changes of sound. The latter method, he says, gives no surer clue to tonal changes than that afforded by percussion with the bare fingers, and its practice obviously forbids all judgment of tactile resistance.

7. **Bronchial Asthma.**—In a patient with severe and repeated attacks of asthma seen by Warren, the pulmonary distention continued for several weeks after a cessation of a prolonged attack. This distention caused the heart to assume a vertical position, but did not influence its surface area. During the attack of asthma the diaphragm moved but slightly, and movements in reverse of the normal were observed. In explaining such reversed movements, however, one must take into account the excessive thoracic movements which act on the diaphragmatic attachments. The movements of these attachments may more than neutralize the movements due to the diaphragmatic contractions, so that the crests of the diaphragm may seem to execute reversed movements.

9. **Chronic Family Jaundice.**—A summary of Hopkins' cases is as follows: The jaundice was in every instance chronic, non-obstructive, and familial in type. In the first family, four members of which had had attacks of varying severity, it extended over three generations, and the attacks were more frequent and more severe in youth. The spleen was enlarged in each attack, at which times there was a moderate degree of anemia. Throughout the course of one case which Hopkins was able to follow more closely than any of the others, the fragility of the red blood-cells ran *pari passu* with the "bilious attacks" and the increase in intensity of jaundice. A second case did not show any increase in fragility, nor did the fourth case, both of which had been free of attacks for some time. The third case showed a lessened resistance of red cells up to 0.54 per cent. NaCl. The second family presented interesting features, in that three generations were involved and no less than five children in one immediate family were subject to the condition at that time. Owing to the fact that most of the family were living in Canada and New England, Hopkins has been unable so far to carry out further studies on the individual cases. In one point Hopkins' findings do not confirm those of Tileston and Griffin, as he has found in the serum of three members of this group isohemolysins to be present in ten out of a series of nineteen experiments.

Archives of Internal Medicine, Chicago

November, XII, No. 5, pp. 485-612

12 Cause of Specific Dynamic Action of Protein. G. Lusk, New York.
13 *Sources of Error in Use of Stomach-Tube for Diagnosis. T. W. Harmer and W. J. Dodd, Boston.
14 *Thrombosis. L. A. choff, Freiburg, Germany.
15 *Blood-Pressure in ates of Excitement and Depression. M. C. Hawley, Watertown, Ill.
16 *Age Incidence in Carcinoma. C. V. Weller, Ann Arbor, Mich.
17 *Heredity with Reference to Cancer. A. S. Warthin, Ann Arbor, Mich.
18 Clinical Study of Vagotonia. A. H. Hopkins, Philadelphia.
19 Experiences with Prophylactic Typhoid Vaccination: Its Effect on Menstruation. A. R. Lamb, New York.
20 *Hexamethylenamin: Liberation of Formaldehyd and Antiseptic Efficiency under Different Chemical and Biologic Conditions. P. J. Hanzlik and R. J. Collins, Cleveland.

13. **Stomach-Tube for Diagnosis.**—The unaided stomach-tube occasionally fails to detect gastric stasis which is demonstrable with the bismuth meal and Roentgen ray. Curious to determine the cause of this inefficiency of the stomach-tube, Harmer and Dodd were led to watch by means of the fluoroscope, the course taken by the tube. They observed in several individuals that the end of the tube did not pass directly to the most dependent portion of the stomach. In these cases, the tip of the tube first touched a portion of the stomach wall well above the most dependent portion. As more tube was passed, the end of the tube slid along the wall of the stomach a greater or lesser distance and became impinged against the stomach wall. On further passage of the tube, the end remained fixed and a downward bowing of the tube into the lower portion of the stomach occurred. This downward bowing of the tube apparently diverted the direction of force on the tip of the tube; for, as more tube was passed and the dependent loop of tube increased in size, the tip sooner or later slipped from its fixed position. The force on the tip was then upward through the dependent loop of tube and consequently the tip slipped upward toward the cardia; that is, it became further removed from any residuum which may have been present in the stomach. On passing still more tube, the end may follow about the wall of the stomach and may eventually reach its most dependent portion. They also observed, however, that it may again curve horizontally and then upward. The tip of the tube may skim the surface of the residuum and therefore drain only a portion of it. Further passage of the tube in the hope of reaching a deeper level of the contents may fail, because the tip may curve upward. The result in such cases may not be seriously deceptive. The degree of stasis may be underestimated, but the analysis of the siphoned contents may show stasis. In some instances, however, considerable amounts of residuum may entirely escape detection by the tube.

14. **Thrombosis.**—Different poisons, whether hemolytic in action or not, Aschoff maintains, bring about distinctive forms of capillary thrombosis, among which can be differentiated the following types: Blood-Platelet Thrombosis: This arises by intravenous injection of a homologous serum, of solutions of hemoglobin and stromata from homologous blood, of heterologous serums, ether, glycerin, distilled water, India ink, collargol and olive oil. The thrombi arise in the capillaries of lungs, liver and spleen. Thrombosis from Blood-Stromata: This occurs in pure form only, when very marked hemolysis occurs in the blood-stream as a result of the action of hemolytic agents. Otherwise it occurs only in conjunction with blood-platelet thrombosis. Thrombosis from Fragments of the Blood Elements (*Bluttrümmerthrombose*): Disintegration of the elements of the blood occurs by introduction of ricin, bacterial toxins, etc., which destroy the leukocytes, lymphocytes, macrophages of the spleen, liver and bone-marrow. The fragments, in conjunction with scanty fragments of erythrocytes, roll themselves together to form thrombi in the spleen and liver. Fibrin is then subsequently deposited there. Leukocytic Thrombosis: The polymorphic and mononuclear leukocytes phagocyte the foreign elements introduced into the blood-stream, and are stopped and held back in the capillaries of the internal organs, especially the lungs, spleen and liver, so that a leukopenia results in the peripheral circulation. This process is especially brought out by bacteria, but also by various indifferent foreign substances like particles of ink and starch. Fibrin Thrombosis: Although by injecting stromata or foreign serums the coagulability of the blood can be increased, no deposit of fibrin occurs. Deposit of fibrin occurs only secondarily, as a sequel of the types of thrombosis already described.

Aschoff claims that neither endothelial damage, on which so much stress was previously laid, nor a direct coagulation of the blood, play any rôle. Only two reasons for the thrombosis require to be considered, and their merits weighed one against the other; they are, the changes in the blood elements themselves, and the slowing of the blood-stream. Neither of these two factors can be excluded, as even in the experiments where thrombi of different sorts are produced by heightening the agglutinability of the blood-platelets by the disintegration of white or red corpuscles, these thrombi can occur only where normally a marked slowing of the blood-stream is present; for example, in the capillaries of the lungs, liver and spleen. But even by very marked destruction of the blood elements it is impossible to produce thrombi by deposition in the larger veins when no slowing of the current occurs. An additional factor, therefore, needs to be considered, especially in cases in which the thrombi are localized in the large veins, and where the above-mentioned capillary regions of the lungs, liver and spleen generally implicated in toxic thrombosis remain free. In such a case the increased agglutinability of the blood-platelets cannot be the direct exciting cause, but a definite and recognizable slowing of the blood-stream must first of all occur.

The slowing of the blood-stream and the alteration of the blood elements themselves, especially alterations of the platelets, are the chief factors in the production, not only of the static, but of toxic thrombosis. In static and similar types of thrombi the slowing of the blood-stream is of prime importance, while for the toxic varieties the changes in the blood elements have the dominating influence.

15. Blood-Pressure in States of Excitement and Depression.—Hawley found that cases of mania show typical features in the tracings which are taken, and these are probably due to an altered state of vasomotor tonicity in keeping with the other motor phenomena in these cases. These features are large amplitude of the curve, rapid action and short interval between beginning of the oscillation and full amplitude. The blood and pulse-pressures are raised and are more marked, as are the other features just spoken of, as the restlessness becomes more marked. All decrease as the patients recover. In non-productive cases these features are much diminished, but still demonstrable. Arteriosclerosis existing in maniacs raises the blood- and pulse-pressure still higher. The usual features of the maniac tracing are as apparent here as in cases without arteriosclerosis, and the larger amplitude, rapid action and early onset in the tracing are not features of the sclerosis, but of the maniac state. In cases of sclerosis occurring in other types of psychosis these features are lacking.

In stuporous cases the blood- and pulse-pressure are quite low. The amplitude is quite small and action is slow and tedious. This seems to indicate a condition of relaxation of the blood-vessels, in keeping with the other phenomena exhibited. In depressed cases the blood- and pulse-pressures are lower than in the maniac states, but higher than in the stuporous states. The amplitude of the wave, its onset and rapidity is less than in the manic states, but higher than in the stuporous states. Any rise in any of these things is due either to muscular resistance or physical disease and not to any state of mind.

In melancholia the average blood-pressure is relatively high, for the patients are among those in middle life. The blood-pressure and pulse-pressure are near normal as long as there is no muscular resistance, and no other factor, such as arteriosclerosis, to produce a rise. The tracings show nothing peculiar, except when these factors are added, and then blood-pressure is raised; the amplitude of the wave is also slightly increased. By taking many readings it may be possible to attribute high blood- and pulse-pressures in some cases to the varying effect of arterial and kidney disease on peripheral resistance rather than to the effect of the mental condition. In other cases resistance on the part of the patient is a factor in raising the pressure—a fact which might be overlooked had only one reading been taken at such a time.

16. Age Incidence in Carcinoma.—An analysis of over 1,100 microscopically verified cases of carcinoma by Weller showed that the incidence of carcinoma is greatest at the age period of 58 to 62. After this period the carcinoma incidence decreases. Carcinoma incidence in women runs a definite cycle which is roughly parallel to that in men, but precedes it by five to ten years. The earlier age for the phases of the curve for women is largely due to the earlier appearance of carcinoma of the breast and uterus as compared to other varieties of carcinoma.

17. Heredity and Carcinoma.—During eighteen years, 3,600 cases of neoplasm of all varieties were studied by Warthin either in material taken for practical diagnosis or obtained by necropsy. Of these 3,600 cases, some 1,600 were cases of carcinoma, as was shown by the microscopic diagnosis. About one thousand of these gave fairly good family histories with the ages of the members. A smaller number (30 per cent.) gave detailed histories. From this number are taken the families which show multiple occurrence of carcinoma. In many of these all of the members of the family for three generations are given; in others, the records are incomplete. Four families give complete records of the descendants of the cancerous grandparent. The incidence of cancer in these families is so striking that it can be interpreted as showing an inherited susceptibility to cancer.

Warthin believes that a marked susceptibility to carcinoma exists in the case of certain family generations and family groups. This susceptibility is frequently associated with a marked susceptibility to tuberculosis, and also with reduced fertility. The multiple occurrence of carcinoma in a family generation practically always means its occurrence in a preceding generation. The family tendency is usually more marked when carcinoma occurs in both maternal and paternal lines. Family susceptibility to carcinoma is shown particularly in the case of carcinoma of the mouth, lip, breast, stomach, intestines and uterus. In a family showing the occurrence of carcinoma in several generations there is a decided tendency for the neoplasm to develop at an earlier age in the members of the youngest generations. In this case the neoplasm often shows an increased malignancy. Because of the difficulty of obtaining complete family records, Warthin says, the laws of inheritance of carcinoma susceptibility cannot be determined accurately, and it is highly desirable that investigations of large family records should be made relative to the occurrence of carcinoma susceptibility. In Levin's study of cancerous fraternities in connection with the whole family history the percentage of cancerous members in each cancerous fraternity corresponds very closely to the Mendelian percentage of members with recessive unit-characters in a hybrid generation. The same conclusion might be drawn from Warthin's cases in certain instances, but it does not seem to him that the data are sufficient for such conclusions. He himself does not consider this conclusion as final. Levin also concludes that resistance to cancer is a dominant character whose absence creates a susceptibility to cancer. While some of Warthin's cases show a family history suggesting this, others would indicate a progressive degenerative inheritance—the running-out of a family line through the gradual development of an inferior stock, particularly as far as resistance to tuberculosis and cancer is concerned.

20. Hexamethylenamin.—The authors summarize the results of their work as follows:

1. The phloroglucin test is the most delicate and most useful test for free formaldehyd.
2. Alkalies prevent, while acids facilitate the liberation of formaldehyd from hexamethylenamin in all body fluids.
3. The liberation of formaldehyd from hexamethylenamin in pathological fluids obeys the same laws as in other solutions; that is, it can only occur in acid reaction. Even when 0.5 per cent. hexamethylenamin was added to them, not enough formaldehyd was liberated to be bactericidal.
4. Hexamethylenamin itself is not bactericidal.
5. Liberation of formaldehyd from hexamethylenamin depends on the excess hydrogen ion concentration of the solution above the neutral point.
6. Previous investigations leave us in doubt as to the behavior of hexamethylenamin in the body.
7. After administration, hexamethylenamin is present, but does not liberate free formaldehyd in blood, cerebrospinal, pleural, pericardial and synovial fluids, vitreous and aqueous humors, and urine when truly alkaline. Formaldehyd is liberated in urine which is truly acid, and in the acid gastric contents.
8. Administration of monosodium phosphate with hexamethylenamin renders the urine acid and facilitates the liberation of formaldehyd.

9. The administration of alkali with hexamethylenamin renders the urine alkaline and inhibits the liberation of formaldehyd.

10. The beneficial therapeutic effects of hexamethylenamin depend on the liberated formaldehyd. Such effects are to be expected principally, if not always, in acid urine only. It is irrational to prescribe alkalies (bicarbonate and citrate) together with hexamethylenamin.

Boston Medical and Surgical Journal

November 13, CLXIX, No. 20, pp. 701-740

21 Nutrition of Anemic and Tuberculous Children. E. A. Locke, Boston.
22 *Carcinoma of Rectum. D. F. Jones, Boston.
23 *Artificial Pneumothorax in Treatment of Chronic Infection of Pleura and Lungs. C. Floyd, Boston.
24 Better Training of Nurses in Insane Hospitals. W. Channing, Brookline, Mass.
25 Case of Orthostatic Albuminuria Treated by Exercise. H. J. FitzSimmons, Boston.

22. **Cancer of Rectum.**—The operation of choice in cancer of the rectum in Jones' opinion is an abdominosacral, rather than an abdominoperineal operation. He has determined on a two-stage operation in a few of the cases. This consists in:

First Stage.—The inferior mesenteric is tied just below its junction with the aorta. The mesentery of the sigmoid is separated from the posterior wall, the ureters identified, and the rectum, with all the pelvic fat, is separated in one mass down to the tip of the coccyx posteriorly, while anteriorly it is separated from the bladder, or vagina. After separating the bowel in this manner, it is held forward and the peritoneal flaps brought together behind it. Instead of dropping the sigmoid back into the abdominal cavity, the upper portion is brought out through a rectus incision, and a Lilienthal colostomy done, great care being used not to injure the vascular arches in the mesentery. After twenty-four hours, the colostomy is opened and the distal portion cleansed by frequent washing, both from below and above.

Second Stage.—After five to seven days, the sacral portion of the operation is carried out as in the single stage operation. The sigmoid is cut off as high as possible in the pelvis, and the proximal end inverted and left as an appendage to the colostomy. Jones has carried out this two-stage operation with excellent immediate results in two cases. If the carcinoma is sufficiently high to make a resection and suture desirable, or if it is desired to bring the end of the sigmoid down through the sphincter, the inferior mesenteric should be tied in the usual way, and the whole sigmoid and rectum freed from the posterior wall and pelvis, as in a single stage operation.

The peritoneal flaps, which have been turned back, are then sutured together close about the freed rectum, and the abdomen closed. In from four to seven days, the posterior operation is carried out, the growth and a sufficient length of rectum above and below the growth is excised with the whole inferior mesenteric artery, and the fat surrounding it. An end-to-end suture is then done or the end of the sigmoid is brought through the sphincter. Jones is convinced that spinal anesthesia is essential in the combined abdominosacral operation, if the mortality is to be kept down.

23. **Artificial Pneumothorax in Chronic Infection of Pleura and Lungs.**—After some experience with the method of artificial pneumothorax in the treatment of pulmonary pneumothorax, Floyd is struck with the relatively small number of those afflicted that are really suitable cases for this treatment. Well marked or advanced strictly unilateral cases are not especially common even in large clinics for pulmonary tuberculosis, and some observers believe that such cases are always bilateral. If this type of case is strictly adhered to, Floyd says, the results obtained where the method is carried out conscientiously will be uniformly good, and the percentage of patients markedly improved or even arrested will be as large as 40 per cent. or 50 per cent. If, on the other hand, as is the tendency with most men, almost any otherwise hopeless case in which satisfactory compression can be obtained, is given a chance of obtaining relief at least from persistent symptoms, the results will not be brilliant, and Floyd believes not more than 5 or 10 per cent. possibly of such cases will be arrested. Artificial pneumothorax, he believes, will be of real aid in the chronically recurring tubercular pleural effusion, and in some cases of bronchiectasis and pulmonary abscess in which the inflammatory conditions to be met are not too extensive. But even if this group of diseases may be benefited by the use of this method, its field in the treatment of diseases of the chest will still be relatively a narrow one. It is most applicable where the patient is under the supervision of hospital or sanatorium management, and has failed to do well with the older and well established methods.

Canadian Medical Association Journal, Toronto.

October, III, No. 10, pp. 835-930

26 *Series of Abdominal Cesarean Sections. F. Fenton, Toronto.
27 *New and Rational Method for Study of Functional Diseases of Nervous System. G. W. Howland, Toronto.
28 Treatment of Tubercular Spondylitis or Pott's Disease. W. G. Turner, Montreal.
29 Running Suture and Bloodless Operation. F. N. G. Starr, Toronto.
30 *Clinical Aspects of Regeneration of Bone, as Manifested by Study of Union of Fractures. E. S. Ryerson, Toronto.
31 Epidemic of Jaundice. M. Mackay, Sherbrooke, Que.

26. **Series of Abdominal Cesarean Sections.**—Of the twenty-six operations performed by Fenton, sixteen were done because of obstruction to delivery owing to contractions in the bony pelvis; six were done on account of antepartum hemorrhage with undilated os; and one each for eclampsia at term, large baby, and stenosis of soft tissues; one case is unclassified owing to loss of history. Five cases were second operations on the same patient and two patients have subsequently delivered themselves unaided. All of the children were delivered alive and all but three left the hospital in good condition. The three died during the first two or three days from prematurity. One mother died, but it might fairly be claimed that her death was not due to operation. All of the cases might be classed as primary operations in that they were either done before the membranes had ruptured or before any attempts had been made *per vaginam* at delivery, or more than one or two vaginal examinations made and those under the strictest precautions.

27. **Functional Diseases of Nervous System.**—Howland pleads that the terms neurasthenia and hysteria should not be used as diagnostic conclusions but should be entirely omitted, and that the general functional disturbances of the nervous system should be classified according to cause.

30. **Regeneration of Bone.**—Ryerson's argument is this: If the periosteum were osteogenetic, then new bone would be produced beneath it over the area where it is stripped up from the bone and the osteoperiosteal angle would be one of the first parts to be filled up. That this is not the case, he claims, is manifested by his plates which show that the osteoperiosteal angle is actually the last part of the space to be filled with a shadow, indicating new bone formation. From this, therefore, his inference is that the periosteum is not osteogenetic in character.

Georgia Medical Association Journal, Augusta

November, III, No. 7, pp. 215-250

32 Problem of Social Evil Considered in Its Social and Medical Aspects and in Relation to Problem of Race Betterment. J. E. Mears, Philadelphia.
33 *Chronic Nephritis Dietetics and Treatment. R. F. Wheat, Amsterdam, Ga.
34 *Prolonged Rest and Simple Diet in Treatment of Bright's Disease. H. F. Harris, Atlanta.
35 *Intestinal Hemorrhage in Typhoid. T. D. Coleman, Augusta.
36 Postoperative Ileus, with Report of Cases. W. L. Cooke, Columbus.
37 Eclampsia. H. W. Birdsong, Ashland.

33, 34 and 35. Abstracted in The Journal, May 31, pp. 1732 and 1733.

Illinois Medical Journal, Chicago

November, XXIV, No. 5, pp. 261-320

38 Auricular Fibrillation. F. Tice, Chicago.
39 Failures and Successes in Diagnosis and Surgical Intervention of Some Intracranial Diseases. J. C. Beck, Chicago.
40 Electrically Propelled Rotary Chain-Saw and Automatic Trephine with Accessory Instruments. E. J. Hoglund, Chicago.
41 Roentgenoscopy of Gastro-Intestinal Motility. C. A. Elliott, Chicago.
42 Compulsory Sterilization and Segregation of Mental Defective. H. M. Carey, Odessa, Del.

43 Inheritance of Some Elements of Hysteria. C. B. Davenport, Cold Spring Harbor, N. Y.
44 Hexamethylenamin in Ophthalmology. H. S. Gradle, Chicago.
45 Rôle of Tarsus in Trachoma. H. W. Woodruff, Joliet.
46 Relation of Local Disease of Ear to Systemic Disease. G. C. Otrich, Belleville.
47 Relation of Eyes to Nose and Accessory Sinuses in Disease. L. J. Hughes, Elgin.

Iowa State Medical Society Journal, Washington

November, III, No. 5, pp. 279-336

48 Mechanical or Forcep Delivery. N. C. Morse, Eldora.
49 Simple Method of Catheter Retention after Suprapubic Cystotomy. L. Schooler, Des Moines.
50 Use of Subconjunctival Injections in Treatment of Eye Disease. L. Weber, Davenport.
51 Surgical Physiology. J. T. McClintock, Iowa City.
52 Prophylaxis of Insanity. M. E. Witte, Clarinda.
53 Clinical Significance of Reflexes. T. B. Throckmorton, Des Moines.

Journal of Biological Chemistry, Baltimore

November, XVI, No. 2, pp. 187-330

54 *Fate of Protein Digestion Products in Body: Determination of Amino Nitrogen in Tissues. D. D. Van Slyke, New York.
55 Idem: Absorption of Amino-Acids from Blood by Tissues. D. D Van Slyke and G. M. Meyer, New York.
56 *Idem: Locus of Chemical Transformation of Absorbed Amino-Acids. D. D. Van Slyke and G. M. Meyer, New York.
57 Idem: Effects of Feeding and Fasting on Amino-Acid Content of Tissues. D. D. Van Slyke and G. M. Meyer, New York.
58 *Influence of Salts Common in Alkali Soils on Growth of Rice Plant. K. Miyake, Sapporo, Japan.
59 Determination of Oxybutyric Acid. P. A. Shaffer and W. M. Marriott, S. Louis.
60 *Determination of Acetone. W. M. Marriott, St. Louis.
61 Nephelometric Determination of Minute Quantities of Acetone. W. M. Marriott, St. Louis.
62 Determination of B-Oxybutyric Acid in Blood and Tissues. W. M. Marriott, St. Louis.
63 *Endogenous Metabolism of Pig as Modified by Various Factors: Effects of Acid and Basic Salts, and of Free Mineral Acids on Endogenous Nitrogen Metabolism. E. V. McCollum and D. R. Hoagland, Madison, Wis.
64 *Idem: Influence of Fat Feeding on Endogenous Nitrogen Metabolism. E. V. McCollum and D. R. Hoagland, Madison, Wis.
65 *Idem: Influence of Benzoic Acid on Endogenous Nitrogen Metabolism. E. V. McCollum and D. R. Hoagland, Madison.
66 Non-Interference of "Ptomains" with Certain Tests for Morphin. J. Rosenbloom and S. R. Mills, Pittsburgh.

54. **Amino Nitrogen in Tissues.**—Van Slyke's work was done as follows: The amino-acids are extracted from the tissues with hot water. Uncoagulated proteins in the extract are precipitated by alcohol. Alcohol and the slight amount of ammonia present in the extract are removed by concentration in vacuum, and the amino nitrogen in the residue is determined by the nitrous acid method. The rapidity with which the amino nitrogen reacts with nitrous acid, and the relatively small increase which it shows as the result of hydrolysis of the extract with hydrochloric acid, indicate that the amino nitrogen determined by the method outlined represents approximately the *free a-amino-acids.* Only a few per cent. of the amino nitrogen appears due to proteins or their intermediate products, and to amines not of protein origin. The correction for the latter can, when desirable, be readily determined.

56. **Transformation of Absorbed Amino-Acids.**—Van Slyke and Meyer show that the absorbed amino-acids (glycocoll, hydrolyzed casein, artificially digested flesh) disappear rapidly from the liver. The amino nitrogen content of this organ may be doubled by an injection of amino-acids into the general circulation, and yet return to normal within two or three hours. During the period required by the liver entirely to rid itself of absorbed amino-acids, their concentration in the muscles suffers no appreciable fall. From the other organs (kidney, intestine, pancreas, spleen) the absorbed amino-acids disappear less rapidly than from the liver, but whether as slowly as from the muscles has not yet been determined. The disappearance of amino-acids from the liver is accompanied by an increase in the urea of the blood. These results support the long contended view that the liver is the organ especially responsible for the catabolism of those protein digestion products not utilized for tissue construction.

The following explanation made by the authors as being consistent with the facts thus far ascertained. The amino-acids, with perhaps some peptides, from the intestine enter the circulation, from which they are almost immediately absorbed by the tissues. The power to take them up from the blood-stream is common to all the tissues, but is limited. The liver, however, continually desaturates itself by metabolizing the amino-acids that it has absorbed, and consequently maintains indefinitely its power to continue removing them from the circulation, so long as they do not enter it faster than the liver can metabolize them. When the entrance is unnaturally rapid or when the liver is sufficiently degenerated, as observed clinically in some pathologic conditions, the kidney assists in removing the amino-acids by excreting them unchanged. Death may result when the above agencies for preventing undue accumulation of protein digestion products are overtaxed. In regard to the synthesis of tissue proteins, the authors believe that, since each tissue has its own store of amino-acids, which it can replenish from the blood, it uses these to synthesize its own proteins.

58. **Influence of Salts on Growth of Rice Plant.**—The injurious effect of certain metallic ions on the growth of rice seedlings, Miyake says, may be perfectly counteracted only by the presence of calcium ions. Strontium ions can exert an influence only slightly retarding the toxicity of the metallic ions. Barium ion not only has no beneficial action, but a depressing effect is observed. Consequently, it is concluded that barium and strontium cannot replace the antagonistic action of calcium.

60. **Determination of Acetone.**—The author states that the Messinger method for acetone estimation gives correct results, whereas the Scott-Wilson method gives accurate results only when certain modifications in the original procedure are made. It is applicable to very minute quantities of acetone. Marriott found that in distilling a very dilute acetone solution, all of the acetone may be collected in the distillate within ten minutes.

63. **Endogenous Nitrogen Metabolism.**—Data are presented by McCollum and Hoagland which show that the endogenous metabolism of the pig reaches its lowest level when the animal has an abundant supply of carbohydrates together with a salt mixture of an alkaline character. The total output of nitrogen derived from endogenous sources can be greatly increased without changing the output of *creatinin.* The additional nitrogen which is eliminated on an acid over what appears on an alkaline diet is in the form of ammonia. The animal is not able to use the nitrogen of the urea fraction to neutralize the acids present in the diet, but draws additional nitrogen from the tissues for ammonia production.

64. **Idem.**—Feeding fat as the sole source of energy, it is claimed by McCollum and Hoagland, does not lead to a sustained rise in the nitrogen output of pigs which have been reduced to their lowest possible level of nitrogen metabolism by long continued starch feeding. Fat feeding may produce a considerable elimination of creatin. The total creatinin (creatinin + creatin) may be greatly increased without a corresponding rise in the total nitrogen output. The possibility of the acid or basic character of the ration having an influence on the creatin production is suggested.

65. **Idem.**—A considerable amount of the nitrogen which appears in the form of urea in pigs reduced to the endogenous level of protein metabolism, McCollum and Hoagland claim, may be converted into glycocoll when benzoic acid is fed, for the purpose of hippuric acid synthesis. When the quantity of benzoic acid ingested is not excessive, there is no noticeable rise in the total nitrogen excreted, over that which is eliminated on the same diet without benzoic acid. When the quantity of benzoic acid ingested is very large, there is a marked increase in the output of total nitrogen *catabolized.* The urea nitrogen cannot be reduced to a lower level than about 20 per cent. of the total. No change in the creatinin output is observed when the protein catabolism is stimulated by excessive doses of benzoic acid. Endogenous protein metabolism appears to consist of at least two types. One can be stimulated greatly for ammonia production by the introduction of mineral acids, or for hippuric acid when benzoic acid is introduced; the other, measured by creatinin, remains unaffected by methods described.

Journal of Medical Research, Boston

October, XXIX, No. 1, pp. 1-146

67 *Distribution of Vital Stains in Animals with Inoculable Tumors. I. Levin, New York.
68 *Experimental Streptococcic Arthritis in Monkeys. O. M. Schloss and N. B. Foster, New York.
69 Action of Human Blood-Serum on Guinea-Pig Erythrocytes. W. T. Cummins, San Francisco.
70 *Presence of Tubercle Bacilli in Feces. A. T. Laird, G. L. Kite and D. A. Stewart, Trudeau, N. Y.
71 Cultural Amebae: Study in Variation. A. W. Williams and G. N. Calkins, Columbia, N. Y.
72 *Study of Experimental Nephritis Caused by Salts of Tartaric Acid. R. M. Pearce and A. I. Ringer, Philadelphia.
73 Morphology of Functional Depression in Nerve Cells and Its Significance for Normal and Abnormal Physiology of Cell. D. H. Dolley, Columbia, Mo.
74 *Thrombosis and Occlusion of Lymphatics. E. L. Opie, St. Louis.

67. **Distribution of Vital Stains.**—The results of Levin's investigation seem to indicate that the vital stains when introduced into an animal with an inoculable tumor do not show any specific distribution which would show a predilection for the cells of the inoculated tumors. The organ cells surrounding the tumor contain the normal quantity of the vitally stained cells, while the tumor itself either contains none or very few such cells. It is of interest, though, to note that of the two tumors used in this investigation the carcinoma did not show any of the vital stains while sarcoma showed a certain amount. Levin suggests that a chemical may influence one kind of tumor and not influence another.

68. **Experimental Streptococcic Arthritis in Monkeys.**—Inoculations of cultures of *Streptococcus pyogenes* into the blood-stream of four monkeys induced a polyarthritis, suggestive in certain respects of "rheumatic fever" in man. In three instances immunity to the infectious agent was observed after repeated inoculations. The infecting organism could be recovered from the blood-stream at the onset of symptoms, but not afterward. This fact possibly has some bearing on the failure to isolate organisms from the blood of man with "rheumatic fever." Recovery from the induced arthritis may be complete and in such cases no lesion is found in the joint or periarticular tissues at autopsy. Repeated inoculations of streptococci induced a chronic arthritis in two cases, which was manifested by limitation of motion and contracture. In these affected joints there was found at autopsy thickening of the periarticular structures, thickening of the synovial membrane with fibroid infiltration and fringes of tissue growing into the joint which suggest villous formation. There was in one case also erosion of the cartilages. These lesions are analogous with those found in some types of chronic arthritis in man. Agglomerations of specifically staining cells were noted in the heart muscle, kidney, liver, spleen and periarticular tissues.

70. **Tubercle Bacilli in Feces.**—The authors briefly summarize their work as follows: Nearly all patients with tubercle bacilli in their sputum also have virulent tubercle bacilli in their feces. Very few persons who do not have tubercle bacilli in their sputum have acid-fast bacilli in their feces.

72. **Experimental Nephritis.**—Pearce and Ringer found that the administration to the dog of tartrates, by mouth, intraperitoneally or subcutaneously, causes a severe renal disturbance characterized by albumin and casts in the urine and diminished flow of urine or complete anuria. The urine passed before complete suppression is water clear of low specific gravity, and the solid constituents are greatly decreased. The most striking histologic change in the kidney is necrosis of the convoluted tubules, with fatty changes in the loops of Henle and sometimes also in the collecting tubules. Exudative glomerular lesions occur in about half the animals with severe tubular lesions. The mode of administration does not influence the character of the renal lesion, except in as much as diarrhea, following administration by mouth, may cause rapid removal of the salt from the intestine, and thus by reducing the amount of absorption prevent the severer types of lesion.

74. **Thrombosis and Occlusion of Lymphatics.**—A number of experiments were performed by Opie to test the effect of different tissues on the coagulation of lymph. He found that the slow coagulation of lymph is hastened by the addition of thrombokinase, and thrombosis within lymphatic channels occurs when thrombokinase is liberated by the tissues in the wall of the lymphatic. Necrosis of cells in contact with the lymph-stream favors thrombosis within lymphatic vessels by bringing thrombokinase into contact with the circulating lymph. After ligation of large lymphatic channels thrombosis may be caused by the injection of bacteria (*Bacillus pyocyaneus, Staphylococcus pyogenes aureus*) into the blood or by infection of the tissues in the neighborhood of the lymphatic channel. Occlusion of the thoracic duct or of large lymphatic trunks is followed by transient edema which is relieved in part at least by the establishment of collateral lymphatic circulation. After ligation of the thoracic duct flow of lymph into the vascular system may be reestablished within from two to four days: (a) by formation of a new channel entering the proximal part of the ligated duct, or (b) by collaterals freely joining the right thoracic duct; (c) in other instances no reestablishment of communication with the vascular system could be demonstrated but there was no widespread edema. Copious chylous ascites may follow occlusion of the thoracic duct in association with injury to a mesenteric lymphatic vessel. In a few instances continued diarrhea follows occlusion of the thoracic duct.

Journal of Outdoor Life, New York

November, X, No. 11, pp. 321-350

75 How to Win the Fight. E. J. Hoyt, Liberty, N. Y.
76 Doctor and Patient. E. R. Rémy, New York.
77 Anti-Tuberculosis Movement in Rio De Janeiro. T. B. Duarte, New York.
78 *Magic Mattress. M. M. Ogilvie, Louisville, Ky.*
79 Tuberculosis Nursing as Profession. M. F. Sloan, Towson, Md.

Kentucky Medical Journal, Bowling Green

November 1, XI, No. 22, pp. 925-966

80 *Symptomatology and Diagnosis of Gall-Bladder Disease.* J. B. Lukins, Louisville.
81 Medical Treatment of Cholecystitis. *W. F. Boggess, Louisville.*
82 *Indications for Surgery in Gall-Bladder Disease.* L. Frank, Louisville.
83 Surgery of Gall-Bladder. J. D. Jackson, Danville.
84 *After Treatment and End Results in Gall-Bladder Surgery. F. H. Montgomery, Danville.*
85 Acute Anterior Poliomyelitis. W. L. Mosby, Bardwell.
86 Intestinal Parasites. T. A. Frazer, Marion.
87 Health [illegible] J. Andrews, Lexington.
88 Appendicitis. [illegible] Cincinnati.

Medical Record, New York

November 15, LXXXIV, No. 20, pp. 875-920

89 Rest and Exercise for Tuberculous and Predisposed Child at School. S. A. Knopf, New York.
90 Architecture of Open-Air Schools. J. V. Van Pelt, New York.
91 Premonitory Aurae in Inebriety. T. D. Crothers, Hartford, Conn.
92 Cases of Tumor of Lungs and Mediastinum Simulating Pulmonary Tuberculosis. W. H. Swan, Colorado Springs, Colo.
93 Pruritus Ani Pertinax. W. P. Cunningham, New York.
94 Value of Typhoid Vaccination in Civil Communities. R. E. Ebersole, Ellis Island, N. Y.
95 Transplantation of Bone for Flail Joint Produced by Inflammatory Destruction of Joint. A. O. Wilensky, New York.
96 Diphtheria Carrier Treated with Culture of Staphylococcus Pyogenes Aureus. I. E. Biskow, Chicago.
97 New Colostomy Apparatus. H. B. Delatour, Brooklyn.
98 Perineorrhaphy Retractor. A. Reich, New York.

New York Medical Journal

November 15, XCVIII, No. 20, pp. 945-996

99 Family Substance and Theory of Coincident Disease in Blood Relations. B. Holmes, Chicago.
100 Medical Care of Aged. I. L. Nascher, New York.
101 Sexual Theories Formed in Early Childhood, and Their Rôle in Psychoneuroses. H. W. Frink, New York.
102 Ocular Vertigo. A. Bray, Philadelphia.
103 Vincula Praeteritorum. W. P. Cunningham, New York.
104 Laboratory Studies of Manic Depressive *Group.* *J. A. Jackson,* Philadelphia.
105 Charity: Some Thoughts on Its Use and Abuse. H. E. Tompkins, New York.
106 Blood-Letting Apparatus. E. C. Burrows, New York.
107 Clinical Observations on Cancer; Its Treatment and Cure by Chemicals Alone. K. F. Junor, Brooklyn.

Northwest Medicine, Seattle, Wash.

November, V, No. 11, pp. 299-328

108 Some Features of Medical Practice. R. E. *Ringo,* Pendleton, Ore.
109 Cysts of Brain and Case of Cerebellar Cyst, with *Pathology and Diagnosis.* L. Selling and A. E. Rockey, Portland, Ore.
110 Tonsil Operation. S. E. Wright, Portland, Ore.
111 Nephritis. E. B. Pickel, Medford, *Ore.*
112 In[illegible]nity, *Related* Methods of Diagnosis and [illegible] Tamiesie, Portland, Ore.

Oklahoma State Medical Association Journal, Muskogee

November, VI, No. 6, pp. 229-274

113 Pathologic Thyroid Gland and Its Treatment. F. Y. Cronk, Guthrie.
114 Cholelithiasis, Cholecystitis and Cholangeitis. D. F. Stough, Geary.
115 Plea for More Rational Intervention in Obstetric Complications. W. A. Fowler, Oklahoma City.
116 Submucous Resection of Nasal Septum. W. A. Cook, Tulsa.
117 Treatment of Corneal Ulcers with Special Reference to Use of Methylene Blue. M. Wiener, St. Louis.
118 Pellagra; New Theory of Its Etiology. J. R. Callaway, Pauls Valley.

Ophthalmic Record, Chicago

November, XXII, No. 11, pp. 645-702

119 Cataract Extraction with Conjunctival Bridge. R. S. Lamb, Washington, D. C.
120 Lid Elevator. W. A. Fisher, Chicago.
121 New Irrigation Basin. I. G. Clark, Columbus, O.
122 Existence and Prevalence of Trachoma among Indians of Northern United States and Canada. W. H. Harrison, Browning, Montana.
123 Case of Sarcoma of Orbit. C. E. Ide, Los Angeles.
124 Orbital and Ocular Neuralgia due to Dental Irritation. H. V. Würdemann, Seattle, Wash.

West Virginia Medical Journal, Wheeling

November, VIII, No. 5, pp. 143-178

125 Pathology, Diagnosis and Treatment of Malignant Tumors of Breast. J. B. Deaver, Philadelphia.
126 Early Diagnosis and Treatment of Malignant Tumors. J. E. Burns, Wheeling.
127 Glaucoma. E. E. Gibbons, Baltimore.
128 Toxemia of Pregnancy, with Special Reference to Eclampsia. A. V. Weinberg, Wheeling.
129 Report of International Congress of School Hygiene. R. H. Edmondson, Morgantown.

Wisconsin Medical Journal, Milwaukee

October, XII, No. 5, pp. 131-170

130 Pathologic and Therapeutic Possibilities of Upper Maxillary Contraction and Expansion. G. V. I. Brown, Milwaukee.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

November 1, II, No. 2757, pp. 1125-1192

1 *Chronic Intestinal Stasis. W. A. Lane.
2 Idem. S. Bainbridge.
3 *Visceral Complications Met with in Hysterectomy for Fibroids. J. Bland-Sutton.
4 *Treatment of Spastic Paraplegia (Little's Disease). E. M. Little.
5 *Hereditary Transmission of Sarcoma. J. S. Manson.
6 *New Method of Dealing with Scars by Multiple Incision and Thiosinamin. A. H. Tubby.
7 School Clinics in Relation to Prevention of Myopia. J. Hern and A. F. MacCallan.
8 Criticism of Sight Tests of Board of Trade. F. W. Edridge-Green.
9 Treatment of Chronic Dacryocystitis. T. H. Butler.
10 Supercorneal Sutures and Operation for Conical Cornea. E. E. Maddox.
11 Nystagmus: One Hundred Cases, Chiefly Ordinary or Non-Miners' Nystagmus. J. A. Wilson.
12 Question of Excision of Eye in Cases of Injury. M. L. Hepburn, R. A. Greeves and S. H. Browning.
13 Persistence of Nerve Plexus of Iris after Excision of Certain Ganglia. W. B. I. Pollock.

1. **Chronic Intestinal Stasis.**—It is Lane's rule to be satisfied with ileocolostomy if it is difficult to remove the large bowel, and to remove it if it can be effected easily. This is a very practical and convenient rule. He never performs gastro-enterostomy for duodenal distention even if there be ulceration, as it is both unnecessary and harmful. If, however, the ulceration has resulted in a considerable reduction of the lumen of the bowel, either by the great extent of the ulceration or because of its cicatrization, he employs a gastro-enterostomy, having first freed the ileal effluent by an ileo-colostomy, or by the other means already referred to. If the stomach be much dilated, because of chronic spasm of the pylorus, to such an extent that, after short-circuiting, the spasm cannot be met by washing out the stomach for several days, he performs gastro-enterostomy. If the stomach be ulcerated and there be no suspicion of cancerous infections in addition to a short-circuit, with or without colectomy, Lane does gastro-enterostomy, in order to take the strain off the lesser curve by draining the stomach very effectually. The only risk, Lane says, presented by the operations of short-circuiting and colectomy is that of adhesion of the intestines to one another, or to the abdominal wall, in such a manner as to produce a varying degree of obstruction. This is a risk common to all abdominal operations, and can only be reduced to a minimum by avoiding any unnecessary exposure or damage of the intestine, and by suturing the cut surfaces of peritoneum accurately together.

3. See *The Lancet*, abstract 29.

4. **Treatment of Spastic Paraplegia.**—The immediate objects of surgical treatment, Little states, are as follows: Correction of deformity, and abolition or diminution of spasm, with the ultimate end in view of enabling the patient to place the limbs in such a position that he may use them properly, but before undertaking any treatment the surgeon must form an estimate of the mental capacity of the patient. If this seems to be normal or even approaching to normal, it is worth while to undertake thorough and long-continued treatment, in the belief that the patient's will power and intelligence will enable him to take advantage of every improvement. If, however, the patient is idiotic, there is little hope of his learning to use his muscles, and disappointment is nearly sure to follow treatment. In a case of doubtful intelligence it is desirable to give the patient the benefit of the doubt, and to undertake the treatment, always remembering on the one hand that parents generally overestimate the intelligence of these children, and on the other that improvement in the physical condition is nearly always accompanied by improvement in the mental condition, sometimes to a surprising extent. Almost all observers are agreed on this point, and also in the opinion that treatment must be patient, prolonged and persevering.

5. **Hereditary Transmission of Sarcoma.**—Manson gives account of the illness and deaths of a mother and two sons from sarcoma, which he thinks justifies the title of his article.

6. **New Method of Dealing with Scars.**—The following method is described by Tubby: With a fine and strong-backed tenotomy knife a large number of multiple incisions are made transversely to the bands of keloid material. The incisions are placed close together, not more than one-tenth of an inch apart; and great care is taken that they should penetrate not only into the subcutaneous fat, but also extend one-quarter or half inch into the neighboring healthy skin. No attempt is made to arrest the hemorrhage except by pressure, and when bleeding has ceased, a solution of thiosinamin is vigorously rubbed in; and, if the scar tissue is very thick, a few drops are injected into the most prominent bands. Tubby has no hesitation in injecting, in children, 15 min. at a time, and in adults 20 min.; in only one case was there any effect on the heart. In that instance some slight cardiac collapse occurred for a few minutes; the patient, however, was over 60 years of age, and, happily, no permanent ill results followed. After the operation, the part is put up on a splint, in as much extension as possible, without tearing the soft parts, and is allowed to heal. This is accompanied by no excessive reaction and very little pain. After ten or fourteen days the wound will be healed, and the mobility of the part is increased by 50 per cent. The operation is then repeated, and, Tubby says, it rarely may be required three or four times. He has carried out this method in over a dozen cases, and has been specially pleased with the results.

Indian Medical Gazette, Calcutta

September, XLVIII, No. 9, pp. 337-376

14 Iodin as Aid to Aseptic Vaccination. E. E. Waters.
15 Relapsing Fever in Bulandshahr District, U. P., 1912-1913. R. Steen and R. S. Townsend.
16 Inquiry into Malaria and Mosquitoes in Kashmir Valley. J. R. Adie.
17 Investigations into Incidence of Malaria in Town of Arambagh, Nooghly District. S. L. Sarkar.
18 Four Indigenous Drugs. R. H. N. Ghosh.
19 Night-Soil Incineration in Cantonments. P. Hehir.

Journal of State Medicine, London

October, XXI, No. 10, pp. 577-640

20 Coagulation of Blood. J. Bordet.
21 Open Spaces. B. Holmes.
22 Etiology of Cholera Asiatica. R. Emmerich.
23 Problem of Surgical Tuberculosis among (A) Uninsured and (B) Insured Persons. H. O. West.
24 Relation of Eugenic Education to Public Health. A. C. Gotto.

Lancet, London

November 1, II, No. 4705, pp. 1235-1298

25 Influence of Harvey's Work in Development of Doctrine of Infection and Immunity. J. M. Bruce.
26 Nature and Degree of Specific Differences among Bacteria. F. W. Andrewes.
27 Two Years' Experience with Salvarsan. M. Morris and H. MacCormac.
28 Arteriovenous Aneurysm of Axillary Vessels of Thirty Years' Duration. W. Osler.
29 *Visceral Complications Met with in Hysterectomy for Fibroids. J. Bland-Sutton.
30 Case of Hypophysis Tumor and Sellar Decompression. W. Harris and C. Graham.

29. **Visceral Complications in Hysterectomy for Fibroids.**—Fibroids, says Bland-Sutton, are often present in women suffering from chronic cardiac disease, and it has been maintained by several writers that uterine fibroids cause degenerative change in the muscular tissue of the heart. Many patients with fibroids have valvular lesions, a consequence of rheumatic fever, and in many women who have been reduced to a condition of profound anemia by a submucous fibroid the heart yields a loud murmur on auscultation. Bland-Sutton has had careful observations made on the cardiac condition of women with fibroids, and he says there is nothing which can be described as peculiar to the influence of these tumors. On a dozen occasions he has removed the uterus containing large fibroids, although the heart has furnished murmurs, clearly due to valvular lesions, when an examination by a competent physician has shown that compensation has been satisfactory and that an operation would not be attended with unusual risks. On three occasions he has removed a uterus containing fibroids from women who at the time of the operation possessed goiters and has been surprised on seeing the patients six months after hysterectomy to notice marked diminution in the size of the goitrous thyroids. The presence of sugar in the urine, is, as a rule, a contra-indication to hysterectomy for fibroids. All patients requiring hysterectomy who come under Bland-Sutton's care have their urine carefully examined for sugar. Gall-stones are common in women; so are fibroids; and it sometimes happens that women come under observation with the two conditions giving so much trouble that the surgeon is puzzled to know which should be dealt with first. On three occasions Bland-Sutton has removed a calculous gall-bladder in the course of hysterectomy for fibroids. In each instance the uterus was so large as to require for its removal an incision reaching nearly to the ensiform cartilage. In these circumstances the removal of the gall-bladder was a simple operation. In one instance the inflamed gall-bladder adhered to a large subserous fibroid. In two other instances of this combination he removed the gall-bladder six months after the hysterectomy. The only definite rule which he thinks can be laid down in the matter is this: If a woman deeply jaundiced in consequence of a stone impacted in the common duct also suffers from a uterine fibroid, which so troubles her as to make it desirable to remove the uterus, he should prefer to remove the stone from the common duct first because it is well known that cholemia predisposes to hemorrhage. Hysterectomy in a woman with persistent jaundice is an operation which would place her life in the gravest peril from post-operative bleeding.

Medical Press and Circular, London

September 24, XCVI, No. 3881, pp. 333-358

31 Diagnosis of Chronic Ulcer of Stomach and Duodenum. J. Sherren.
32 Roentgen Rays in Diagnosis of Abnormalities in Intestinal Tract. M. R. J. Hayes.
33 Heredity and Skull Form. W. H. Broad.
34 Treatment of Tuberculous Joints by Internal and External Use of Iodin. T. Dutton.
35 Leprosy Bacillus and Allied Bacilli. E. R. Rost.

October 1, No. 3882, pp. 359-384

36 Meningeal Reactions in Course of Poliomyelitis. V. Hutinel.
37 *Nauheim Treatment in England. L. T. Thorne.
38 Hilus Tuberculosis (Root Phthisis). R. M. Leslie.
39 Necessity for State Endowed Hospitals and State Medical Service. J. C. M'Walter.
40 Relations of Anemia to Achylia and Gastritis Chronica. K. Faber.
41 Medical Treatment of Piles. C. Duba.

October 8, No. 3883, pp. 385-410

42 Practical Consideration of Vaccine Therapy. W. Wingrave.
43 Malingering. F. S. Palmer.
44 Acute Rheumatism. F. J. Poynton and A. Paine.
45 Treatment of Skin Affections by Solid Carbon Dioxid. J. L. Bunch.
46 Some Rhenish Surgery. W. Doolin.

37. **Nauheim Treatment in England.**—The post-influenzal heart, weakened and dilated by the toxins of the disease, and giving rise to symptoms of dyspnea, palpitation and cardiac pain, and ultimately causing a general invalidism and inability for any work or pleasure, Thorne says, is one which responds rapidly to this treatment. Cases of high arterial tension, in which the area of cardiac dulness is found to be enlarged, exhibiting symptoms of dyspnea, headache, palpitation, cyanosis and general ill-health, will respond well to a course of Nauheim baths, and the blood-pressure will drop from 20 to 40 mm. Hg during treatment, often falling from 170-80 mm. Hg to 130-40 mm. Hg, and the troublesome and dangerous symptoms will be relieved for a long period. Cases of valvular disease with cardiac dilatation, indicating a weakened and degenerate condition of the myocardium, respond well to the treatment, more especially if high arterial tension is present.

In uncomplicated cases of valvular disease with cardiac hypertrophy treatment is not necessary, but it is seldom that a case of valvular disease of long standing with a raised blood-pressure does not exhibit some symptoms of cardiac dilatation and defective circulation, and if these are present they can be relieved by a course of baths more satisfactorily and for a longer period than by any other form of treatment. When premature cardiac contractions, arising in the ventricles or auricles, are present, causing cardiac irregularities and distress to the patient, it is often found that they gradually decrease in frequency during a course, and that at the end of the treatment a perfectly regular heart's action is established, this being due to the improved nutrititon of the conductive mechanism of the heart. Cases of obesity and fat-clogged hearts and raised blood-pressure are not only greatly improved in health by a course of Nauheim baths, but lose fat steadily both during the course and for some months after.

Cases of irritable heart of a "functional" nature, in which no organic lesion is discovered, are often greatly relieved by this treatment, but they are not so certain of improvement as cases in which definite dilatation is present. Cases of anemia with cardiac dilatation, which do not respond to treatment with iron, arsenic or general hygienics, will often show immediate improvement if a course of Nauheim baths is given in conjunction with other treatment. Thorne states that it is not advisable to give the Nauheim treatment in cases in which there is general evidence of a broken-down constitution, nor has he found it of much benefit to patients exhibiting auricular fibrillation, or in those in which very advanced degeneration of the vessel-walls is present.

Practitioner, London

November, XCI, No. 5, pp. 589-744

47 *Widal's Agglutination Reaction as Aid in Prognosis in Enteric Fever. H. H. Scott.
48 Diagnosis and Treatment of Hemic Infection of Urinary Tract. F. Kidd.
49 Recent Work on Anesthesia. J. Blumfeld.
50 Law and Medicine, 1912-1913. W. A. Brend.
51 Recent Work on Diseases of Lungs. A. J. Jex-Blake.
52 Tuberculin in Diagnosis and Treatment of Pulmonary Tuberculosis. J. K. Patrick.
53 Tuberculin in Diagnosis and Treatment of Tuberculosis. A. D. S. Cooke.
54 Rational Treatment of Cancer. De Keating-Hart.
55 So-Called Movable Kidney Disease. G. Monod.
56 Infantilism. C. E. Zundel.
57 *Effect of Nauheim Baths on Cardiac Conductivity. L. T. Thorne.
58 Symptomatology of Cholelithiasis. C. M. Kennedy.
59 *Is Enlarged Prostate the Cause of Residual Urine? A. G. Miller.
60 Relation between Pancreas and Diabetes. T. S. Tirumurti.
61 Acute Pemphigus due to Infection by Diplococcus. G. W. M. Custance.
62 Effect of Mental State, of Minor and Major Attacks in Epileptic Insanity. S. J. A. H. Walshe.
63 Physicians in Decameron. J. B. Adams.

47. **Widal's Agglutination Reaction.**—The main point made by Scott is the value of the agglutination reaction as an aid

in prognosis. If the case is "clinically typhoid" but no agglutination is obtained by the tenth day, Scott says, the case is likely to be severe and prolonged. Not uncommonly a hemorrhage in these cases will, within a few hours (provided it is not fatal), be followed by a marked rise in the agglutinating power of the serum. Scott is inclined to think that in some of such cases benefit would result, if nature were to be forestalled by a small quantity of blood being withdrawn by venesection, and the agglutinating power of the serum thus raised.

57. **Cardiac Conductivity.**—Thorne cites cases to show that the action of Nauheim baths on cardiac conductivity and muscle contraction is very beneficial, for it not only accelerates a slow, and regulates an irregular conductivity, but markedly stimulates auricular contraction.

59. **Is Enlarged Prostate Cause of Residual Urine?**—The question asked in the title is answered by Miller in the negative because he has seen cases in which there was enlarged prostate without any residual urine, and others in which there was residual urine without any perceptible enlargement of the prostate. In patients who present themselves for treatment, especially at hospitals, the two conditions usually co-exist. Miller submits this might be because both conditions are common in old men. If each occurs sometimes separately, surely neither can be considered the invariable cause or result of the other. They cannot be mutually inter-dependent. In Miller's opinion residual urine is the result of an acquired habit of not emptying the bladder thoroughly. No doubt an enlarged prostate, by making micturition more difficult, increases this habit or may start it. But, that "habit" is the explanation is Miller's conviction, because residual urine can be got rid of by training the bladder to empty itself thoroughly even when enlargement of the prostate is present.

Annales de Gynécologie et d'Obstétrique, Paris

October, XL, No. 10, pp. 561-624

64 Pathogenesis of Traumatic Lesions of the Orbit during Forceps Delivery. Lévy.
65 *Pedunculated* Thrombus in the Vagina in Two Pregnant Women. J. Potocki and C. Sauvage.
66 The Arterial Blood-Pressure Rises during Onset of Lactation. Audebert and Etchevers.

Annales de Médecine et Chirurgie Infantiles, Paris

October 15, XVII, No. 20, pp. 669-704

67 *Obesity in Children. P. Le Gendre.

67. **Obesity in Children.**—Le Gendre's article has already been mentioned in The Journal, November 8, p. 1739. He emphasizes that obesity is a progressive syndrome from changes in the functioning of the nervous system regulating the deposits of fat; these disturbances are the result of the action of toxins from within or without. The obesity is first a symptom, then a syndrome, and then a disease, and it is important to arrest it in its early phases. Obesity may be regarded as physiologic in a breast-fed infant with good general health; the weight generally returns to the normal standard after the child begins to walk. There is also a physiologic obesity just before puberty which the children outgrow. Under all other conditions he regards a progressive increase in fat under ordinary circumstances as a sign that something is wrong and requires correction; if not corrected, other functional disturbance will develop not dependent on the obesity but on the nutritional anomaly of which the obesity is only one manifestation. An inherited predisposition is evident in the majority of cases; such children generally belong to families of large eaters through several generations, and the obesity in the children can be traced to this gouty, neuro-arthritic inheritance with sluggish elimination. He discusses the influence of the glands with an internal secretion, and says that the importance of correcting the causes entailing obesity in children is enhanced by the fact that the obesity prevents the child's taking part in the plays of its mates. Treatment should aim to correct the errors in hygiene and diet and the insufficiency of the thyroid, genital or other glands involved. The table in certain families, he remarks, seems to be planned to bring on obesity, or the children are given beer or wine which injures their digestion and nervous system. In certain families the parents demand too much of the children so that they reach school wearied and worried over their tasks and lessons, their walk to school interfering with digestion. Then they are liable to play too hard and exhaust themselves and forget to go to stool at regular hours. He thinks that walking may be carried to excess for children; their bones are not fitted for prolonged regular walking. It is valuable only in small doses, but a few minutes of exercises and games which have a tendency to increase the ventilation of the lungs are particularly useful. The great difficulty in the family is that the parents like to see the child eat and fear "it is not getting enough."

Journal de Chirurgie, Paris

October, XI, No. 4, pp. 409-532

68 *Operative Treatment of Infectious Processes in the Palm of the Hand. R. Picqué.

68. **Infectious Processes in the Palm of the Hand.**—Picqué describes with fourteen illustrations the best technics for operating on infectious processes in muscle or tendon sheaths in the palm. Eight of the illustrations are devoted to the normal anatomy of the region at different depths. For a phlegmon in the palm, he makes two incisions, radiating from the center of the palm near the root of the thumb, but for suppuration in the tendon sheaths he makes four, one along the ball of the thumb, the second an extension of this along the front of the thumb. The third incision runs at a right angle from the first and reaches nearly to the root of the little finger. The fourth is the extension on the palmar aspect of the little finger of the third incision. By this quadruple incision, total suppurating palmar synovitis can be reached and treated without injury of the vessels. The two incisions run parallel to the vessels, but they are on the flank of the flexors and thus the vessels can be readily detected and drawn aside at need. The four drains introduced should converge toward the pus pocket but they should never be pushed forcibly in. He has seen the temperature drop from 104 to normal by the next morning after this quadruple incision which ensures transverse drainage on both sides. In case the trouble persists, from involvement of the wrist region, he divides the annular ligament after suturing the four incisions of the day before. No functional disturbances follow section of the annular ligament, while it permits ideal drainage of the region. If a phlegmon develops in the forearm, the two lateral incisions below should be carried up as needed. If the wrist proper suppurates, the dorsal incision according to the Ollier or Kocher technic, supplementary to the incisions in the palm, will permit X drainage. In one case he successfully performed all the above operations in turn in the course of forty-eight hours, an insane man having cut himself by breaking a window. Lecène cuts the annular ligament as one of the first steps, but Picqué advises the above sequence, restricting the intervention to what is actually needed at the moment.

Journal d'Urologie, Paris

October, IV, No. 4, pp. 533-732

69 *After Suprapubic Prostatectomy. G. Marion.
70 Impalement Injury of the Bladder. M. Gerard.
71 *Nephrostomy. (Moyen de dérivation permanente ou temporaire des urines totales.) J. Pakowski. Commenced No. 3.
72 *Failure of Tuberculin Treatment in Renal Tuberculosis. C. Gauthier.
73 Urethroceles in Men. J. Paris and A. Fournier.
74 Irrigation of the Urethra without a Catheter. (Technique des lavages sans sonde de l'urètre.) J. Janet.

69. **Suprapubic Prostatectomy.**—Marion declares that the care after the operation is responsible for the ultimate outcome far more than the operation itself. Everything should be done to hasten the healing of the wounds and restore normal conditions in the bladder while keeping the general condition good, constantly on the watch to avert complications. He drains by means of a broad right-angled tube with small tube attached to permit irrigation of the bladder. The recess left by removal of the prostate is packed loosely with gauze to which two threads are firmly fastened, the ends of the threads brought out through the broad glass-drain. The drain tube must reach deep down into the bladder to ensure

perfect draining; as the wound heals the tube is replaced with one of smaller diameter. The part reaching into the bladder is the same length in all. Some of his patients had the bladder heal in twelve days, others not until twenty-five or thirty days. The retention catheter must be kept in place nights for two nights after the bladder has healed, to avert distention during sleep. The less the parts are handled, the less danger of complications. He insists that the postoperative measures should be applied by the physician himself, unless he has a dependable nurse with long experience in exactly these cases. By taking charge of these minor details, the physician is kept in close touch with the patient and can detect and remedy unfavorable conditions at their first manifestations, while he is constantly learning new points in treatment which can be applied at the time and later.

71. Advantages of Nephrostomy.—Pakowski concludes his long article on this subject by emphasizing the importance of proceeding gradually, never attempting too much at one sitting, in operations on the urinary apparatus. A preceding nephrostomy on both sides, diverting the course of the urine, leaves the field below free for any operation that may be required. The mortality to date has been only 4.5 per cent., and in these cases the fatality was due to the affection for which the nephrostomy had to be done rather than to the nephrostomy itself. Implantation of the ureters in the skin, urethra, vagina or bowel has a high mortality at the time and from pyelonephritis later. Nephrostomy permits direct treatment of lesions in the kidney; it also permits restoration of the natural course of the urine later, while it drains the kidneys most effectually, and this is the only means of warding off ascending infection. Ureterostomy is its only rival, but this does not drain the kidney so well.

He reviews 119 cases of total cystectomy; sixty-seven patients did not survive the operation, the mortality thus being 56.3 per cent. The gravity of the prognosis in these cases is due to the unwise method of caring for the ureters. Four died at once of the five patients whose ureters were implanted in the urethra; nine out of sixteen soon died when the ureters were implanted in the vagina. The mortality was 67.2 per cent. in the fifty-five cases in which the ureters were implanted in the bowel. All these fatalities are due to shock, anuria, peritonitis or ascending infection—all of which is the result of the laborious technic of the implantation procedure or of defective sutures. The fatal factor in this high mortality is generally pyelonephritis; it may have existed prior to the operation, and this is an additional argument in favor of preliminary nephrostomy. This is the only means to estimate conditions in the kidneys and improve them before proceeding to the cystectomy or other operation below. The benefits of this are instructively shown in two cases related in detail: In the first preliminary bilateral nephrostomy was done ten days before the bladder was entirely removed for cancer. The general condition is very good to date, nearly a year since the operation. The nephrostomy was also intended to be permanent in the second case in which the bladder and prostate were removed for epithelioma; the man of 53 was a worker on anilin dyes. The first symptoms of trouble had been severe recurring hematuria. There was no shock after the cystectomy, but rebellious hiccough for a few days followed both the nephrostomy and the cystectomy. Pakowski regards double nephrostomy as indicated with all malignant, painful and rebellious affections of the bladder, as also with congenital malformations, and with affections of the pelvic organs invading the bladder or compressing the ureters; also in case of a persisting tendency to production of calculi in the kidneys. Nephrostomy may be the only means to correct nephrolithiasis. Nephrostomy may also be indicated as a preliminary to treatment or operation for traumatic lesions of the lower urinary apparatus, especially vesicovaginal fistula. The nephrostomy may be only temporary in these cases. Nearly twelve pages of bibliography are appended.

72. Tuberculin Treatment of Renal Tuberculosis.—Gauthier reports the end-results in a case of renal tuberculosis which he published last year as an instance of successful tuberculin treatment. Nephrectomy became necessary a few months later. This has destroyed his confidence in tuberculin treatment, as this is his fourth failure with it. He found it valuable in two other cases, in one of which both kidneys were involved, rendering nephrectomy impossible. His conclusions are in harmony with Albarran's dictum, *Diagnostic précoce, néphrectomie précoce.*

Lyon Chirurgical, Lyons

September, X, No. 3, pp. 221-328

75 *Retrogasserian Neurotomy for Neuralgia. (La résection physiologique du ganglion de Gasser dans le traitement des névralgies faciales rebelles.) F. de Beule.
76 *Parasitic Invasion as Cause of Malignant Degeneration of Benign Tumors of the Breast. M. Jaboulay.
77 Murphy's Arthroplastic Method for Ankylosis of the Hip Joint. Guillot and Dehelly.
78 *Stretching the Solar Plexus in Treatment of Gastric Crises in Tabes. R. Leriche and P. Dufourt.

October, No. 4, pp. 329-424

79 Inflammatory Ovarian Tuberculosis. (Les productions kystiques de l'ovaire liées à la tuberculose.) A. Pollosson and H. Violet.
80 Anatomic and Physiologic Aspects of Decapsulation of the Kidney. J. Murard.
81 Experimental [illegible] Ovaries. A. Lacassagne.
82 *Stretching or [illegible] Nerves in Painful Arterial Affectic [illegible] R. Leriche.

75. Operative Treatment of Trigeminal Neuralgia.—De Beule insists that resection of the root of the trigeminal nerve between the gasserian ganglion and the protuberance answers all the purposes of gasserectomy while it is a much simpler and safer operation. It does not destroy the nerve route but breaks its continuity by taking out a segment. He says that the nerve here is composed exclusively of white fibers, and white fibers once degenerated never regenerate anew, and consequently no transmission of pain is possible later, while the ganglion and the rest of the nerve are left intact. De Beule credits the method to Spiller of this country, but says that Van Gehuchten's research first rendered it practicable. All his eight patients have been permanently cured by the operation, and no by-effects have been observed. This technic has been applied in seventy cases to date, to his knowledge; two patients died. In one of De Beule's cases the patient died several months later and necropsy revealed a large cancer originating in the sphenoidal sinus. The pressure from the growth had evidently been the cause of the "neuralgia," but the patient was freed from pain thereafter by the neurotomy. This case is cited as strikingly confirming the theoretical premises on which the retrogasserian neurotomy is based. Seven plates accompany the article illustrating the technic and the ample access and oversight afforded by turning down a flap directly over the ear. The guide is the anterior surface and the upper margin of the petrous portion of the temporal bone, and this must not be forsaken on any pretext. The outer edge of the nerve is always found just inside the retrogasserian tubercle.

76. Malignant Degeneration of Benign Tumors of the Breast.—Jaboulay ascribes to invasion by a protozoon the transformation of benign mammary tumors. The sarcosporidia involved are not found in the same phases of development as in animals, but the cancerous degeneration follows on their trail. He gives eight illustrations of sporoblasts and spores found in a testicle sarcoma; sarcosporidia in a thyroid cancer; spores in a mammary tumor, showing patches of malignant degeneration, cystic disease, etc.

78-82. Stretching the Perivascular Nerves for Painful Arterial and Other Disease.—Leriche and Dufourt report four cases of tabetic gastric crises in which they applied stretching of the solar plexus. They state that the procedure caused no inconveniences of any kind and the immediate results were excellent, but they did not prove durable. They think that the principle is good, but that the technic to date is still defective. Leriche ascribes the failure in tabes to the fact that the lesion of the nerves is too diffuse and wide-spread to be affected by the operation. On the other hand, it offers every prospect of success in certain cases of intestinal pain of arterial origin which may be defined as Raynaud's disease of the intestine, as also in painful subacute aortitis. The spread of the inflammation to the nerves around entails intense pain, liable to elicit fatal reflex action, vasomotor spasm of the coronaries, cerebral arteries or bronchial vessels. Other affections possibly amenable to this treatment are true Raynaud's disease and congenital trophoedema. In a case of the latter, Leriche states that the leg became reduced 2 cm. in circumference after denudation of the femoral artery in the triangle of Scarpa. Jaboulay has found this useful in treatment of rebellious mal perforant; Viannay has been equally successful with it, and Leriche in two cases. In one of his cases the affection returned a few months later, but the healing proceeded rapidly afterward. The aim is to stretch the perivascular plexuses, dilacerating the peri-arterial plexus. He calls the procedure "denudation of the artery and dilaceration of the perivascular nerve plexuses." The disturbances he seeks to remedy by this may not be the only elements in the clinical picture, but excluding these may transform the whole syndrome. The nerve ramifications may be involved in inflammatory sclerosis, and there is every reason to liberate them.

Presse Médicale, Paris

October 18, XXI, No. 85, pp. 845-856

83 Diathermia. A. Zimmern.

October 22, No. 86, pp. 857-864

84 Localization of Arsenic in the Viscera after Injections of Salvarsan. E. Jeanselme and others.

Revue Médicale de la Suisse Romande, Geneva

October, XXXIII, No. 10, pp. 721-792

85 *Classification of Nervous and Mental Diseases. (Le concept de psychasténie.) L. Schnyder.
86 The Internal Ear. (Exploration clinique du labyrinthe. Dernières acquisitions et vue d'ensemble.) H. Joliat. Continued.
87 Lymphogranuloma in the Mediastinum. Wanner.
88 *Tetanus of the Head. (Le tétanos céphalique). J. Mégevand.

85. **Classification of Mental Diseases.**—Schnyder thinks that in all the fluctuating conceptions of nervous and mental diseases the conception of psychasthenia, as Dubois formulates it, supplies a solid foundation for classification and treatment. This conception defines psychasthenia as a weakness in the primary judgment of things and events. Psychonervous disturbances can thus be traced to the habitual mentality. Effectual treatment, therefore, consists in rendering the judgment saner, bringing the individual to a juster appreciation of things and events.

88. **Tetanus of the Head.**—There was no history of trauma, and the young man had been previously healthy when the tetanus developed with facial paralysis and trismus. The reflexes were exaggerated but three were no other symptoms except that the larger muscles were slightly tender and showed a trifle of contraction. He was given chloral in large doses, 12 gm. a day for thirteen days. Then the chloral was suspended for two days, but aggravation of the symptoms and pain in the legs caused its resumption. Within fifty-one days he was given 456 gm. of chloral with final recovery. The disease evidently increases the tolerance for the drug. The mortality of tetanus of the head is only 36 per cent., according to recent statistics.

Semaine Médicale, Paris

October 22, XXXIII, No. 43, pp. 505-516

89 *Automatic Reflex Movements. (Réflexes d'automatisme médullaire et réflexes dits "de défense"; le phénomène des racourcisseurs.) P. Marie and C. Foix.

89. **Automatic Reflex Movements.**—Marie and Foix have been studying the reflex movements which occur after the brain has been cut off from communication with the limbs, as in decapitated frogs. They conclude from their research that these reflex movements are not for the purpose of defense but are mainly the automatic movements of locomotion. The limbs are drawn up as in walking, the spinal cord functioning automatically when the brain is cut off. The reflex flexing of the limb is thus a sign of injury of the pyramidal tract. This assumption was confirmed at necropsy in three typical clinical cases. The reflex movements are generally moderate when the pyramidal tract is not much affected, but they become extremely pronounced when all the conducting routes are interrupted more or less completely, as by transverse myelitis or with paraplegia from compression. The tendon reflexes are exaggerated in the former, and the reflex automatic gait movements in the latter. These reflexes can even locate the site of the lesion in some cases. Study of them shows the connection between isolated facts which have hitherto seemed incomprehensible separate phenomena. These automatic, falsely styled "defensive" reactions fit into the great group of sensory-motor reflexes; they show the close connection between human pathology and experimental physiology and throw new light on the complex problems of reflex action and contractures.

Berliner klinische Wochenschrift

October 20, L, No. 42, pp. 1929-1976

90 *Scarlatinal Kidney-Heart Disease. (Zur Kenntnis der nephritischen Herzanomalien bei Scharlach und ihre Behandlung.) A. Baginsky.
91 Cultivation of Parasite of Rabies. H. Noguchi (New York).
92 Varying Resisting Power of Different Kinds of Leukocytes. (Resistenz der farblosen Blutzellen.) A. Fraenkel.
93 Rectal Etherization. (Neue Methoden der Allgemeinnarkose.) J. H. Cunningham (Boston).
94 Pathology of Shock. Y. Henderson (New Haven).
95 Vaccine Therapy of Cancer. A. Pinkuss and W. Kloninger.
96 *Immunization of the Blood against Septic Disease. P. Krohl.
97 Deformity of the Skeleton of the Trunk. (Die angeborenen Entwicklungsfehler des Rumpfskeletts.) M. Böhm.
98 The Surgeon and the Law. (Die Stellungnahme der Strafrechtskommission des Reichsjustizamtes zum ärztlichen Operationsrecht.) S. Alexander.
99 The Rizzoli Orthopedic Institute at Bologna, Italy. G. Joachimsthal.
100 *Tuberculosis in Prussia since 1876. R. Behla.

90. **Scarlatinal Heart and Kidney Complications.**—Baginsky reports some cases and expatiates on the benefit from sweating procedures in the moderately severe cases. They not only arrest by mechanical means the congestion and tendency to suffocation from the hydrops, but they relieve the heart and respiration by the diuresis induced. A typical case is described in which the temperature was 105 at first but dropped at once after venesection, and the sweating procedure completed the change for the better. When the temperature keeps high, these hot sweating procedures are contraindicated as fraught with too much danger, and cold packs should be given the preference, leaving the child for an hour or two to sweat in the cold pack. In a typical case reported, a month after scarlet fever, the symptoms of uremia, dilatation of the heart, hydrops, high fever and severe dyspnea, subsided under the cold pack in which the child, a little over 3 years old, was left to sweat for a time. It seemed to have a direct life-saving action. He does not advise but one such pack a day, and he warns that as children react more vigorously to therapeutic intervention than adults, the pediatrist must be even more cool and cautious than at the bedside of adults.

96. **Mercury for Immunization of the Blood Against Septic Disease.**—Krohl noticed that patients taking a course of mercurial treatment seemed to be peculiarly resistant to ordinary infectious diseases, especially to epidemics of cholera, in his practice at Kiev. This fact and others suggested that mercury might have an action on the blood rendering it immune to septic processes, and his experiments with seventy-eight rabbits apparently confirm this assumption. He found that rabbits injected with mercuric benzoate (hydrargyrum benzoicum), bore without harm the injection of serum from the blood of a woman who had died of puerperal fever, or injection of pure cultures of streptococci. The doses of the mercury were very small; a series of injections of 0.0015 gm. to 1 kg. of the body-weight rendered the animal non-susceptible to infection with streptococci. A shorter series with a little larger dose also answers the same purpose. The drug showed such efficacy in the animals that he applied the same treatment to a number of patients threatened with septic processes, and reports a few typical cases to show the efficacy of intramuscular injections of this drug in prophylaxis of sepsis. Once developed, the septic affection is not modified by the small doses which he recommends. Among the illustrative cases cited is that of a woman of 29 who had chills and temperature of 39.1 C., pulse 128, the skin dry and the patient very restless and extremely thirsty, the third day

after delivery. She was given three injections of 0.01 gm. mercuric benzoate in the course of three days, under which the temperature and pulse subsided to normal. In another case with about the same symptoms after an artificial abortion, the mercury was not commenced until after the fourth day, and the patient died. Krohl regards these experiences as showing the importance of sterilizing the blood in this way while it is still possible to effect this.

100. **Tuberculosis in Prussia According to Age.**—Behla gives diagrams showing the mortality from tuberculosis according to ages since 1876. The total mortality has dropped from 30.95 per 10,000 living, in 1876, to 14.58 in 1912. Between the ages of 15 and 30 the decline has been from 26.91 to 17.48; between 30 and 60, from 48.62 to 19.49, and over 60, from 77.62 to 19.81. For children under 15, the decline has not been so great: Under 1 year of age the mortality was 22.24 in 1876 and 18.4 in 1912; between 1 and 5 years of age the figures are respectively 11.72 and 8.22; between 5 and 10, 4.17 and 4.32 and betecwn 10 and 15, 5.71 and 5.21. This lack of decline in the mortality from tuberculosis among children is remarkable when we consider that the mortality from other diseases among children has dropped so materially for the same ages. Diphtheria, for instance, from 45.09 to 6.98, and typhoid from 5.29 to 0.28. The figures for 1908 show that 1,423 of 2,852 infants succumbing to tuberculosis died in the first six months and 1,429 in the rest of the year. If congenital tuberculosis were very prevalent the proportion succumbing in the first six months would have been larger.

Correspondenz-Blatt für Schweizer Aerzte, Basel

October 11, XLIII, No. 41, pp. 1281-1312

101 Roentgenoscopy of Pulmonary Tuberculosis. H. Staub.

October 18, No. 42, pp. 1313-1344

102 Therapeutic Pneumothorax in Pulmonary Tuberculosis; Twenty Cases O. Amrein and F. Lichtenhahn.

Deutsche medizinische Wochenschrift, Berlin

October 23, XXXIX, No. 43, pp. 2073-2128

103 *Combined Treatment of Cancer. (Die Bestrahlungs- und chirurgische Behandlung maligner Neubildungen.) L. Freund.
104 *Benzol in Leukemia. E. Mühlmann.
105 Experimental Research on Abderhalden's Serodiagnosis of Pregnancy. Naumann.
106 Recovery after Nephrectomy for Misplaced Tuberculous Cystic Kidney. (Grosse Solitärzyste in einer ins Becken gewanderten tuberkulösen, arteriosklerotischen Amyloidniere.) W. Falgowski.
107 Sleeping-Sickness in Uganda. C. Schilling.

103. **Radiotherapy of Cancer.**—Freund emphasizes that the same rules apply to radiotherapy as to operative treatment of cancer, namely, that intervention should be as early as possible, before the lymph and blood-vessels have become involved and before long offshoots have been sent forth. When the technic becomes so perfected that all the cancerous tissue can be effectually destroyed by the rays applied from all sides, then radiotherapy can be regarded as a certain cure for cancer. Until these conditions are realized the rays have only a narrow field of action, and radiotherapy thus represents merely a painless and elegant method of palliative treatment: The cancer germs left, not destroyed by it, bring on recurrence with possibly even a more rapid course than the first time. It is impossible to say beforehand whether the rays will reach and destroy all the cancer cells, although this is always theoretically possible. He adds that even if the cancer is entirely cured by the radiotherapy, this does not guarantee that another cancer may not develop at some previously sound point, in the sound breast, for instance. Preceding removal of the pathologic tissue will naturally enhance the action of radiotherapy later. He thinks that the dosage in milligram-hours is not very scientific. The dosage should be calculated for the quantity of the radium element present, the length of the exposures, the mode of filtering, the superficial and deep extent of the cancer, and its histologic and physical character. His conclusions are based on 176 cancers treated by the Roentgen rays or radium in the last twelve years in Finger's service at Vienna. The best results were attained in case of epithelioma, ulcus rodens and Paget's disease. Thirty-two of the eighty patients in these categories have been cured for from one to ten years, that is, 35 per cent.

104. **Benzol in Leukemia.**—Mühlmann reports a case of lymphatic leukemia in a man of 37 with necropsy findings. He was given benzol during nearly six months to a total of 175 gm. There was marked improvement at first; after three or four weeks the condition was much improved and the condition continued to improve on suspension of the benzol for two weeks; then the leukocytes began to increase in numbers again but a further course of 40 gm. benzol reduced the leukocytes to 20,000. Then they ran up again and the patient succumbed. Necropsy showed extensive necrosis in the liver. Neumann has reported similar findings of necrosis in the liver of a man with myeloid leukemia treated with benzol. Pappenheim also found necrosis in the liver of rabbits given benzol, although in the rabbit liver the necrosis was in the outer portions; in the two clinical cases it was in the central part. These experiences emphasize the wisdom of keeping close supervision over the functioning of the liver during a course of benzol treatment.

Deutsche Zeitschrift für Chirurgie, Leipsic

October, CXXV, Nos. 1-2, pp. 1-210

108 Sacral Anesthesia in Surgery. M. Suchy.
109 Experimental and Clinical Research on Chronic Granulating Inflammation of the Bone Marrow; Staphylomycosis. F. Rost.
110 *Polyserositis. V. Esau.
111 Dislocation of the Knee-Joint with Inversion of the Patella. M. Frei.
112 Prophylaxis of Recurrence of Cancer. A. Theilhaber.

110. **Polyserositis.**—Esau operated for a supposed abdominal tumor in the case reported but no tumor was found, merely an enormously enlarged liver, with ascites. The liver tissue seemed normal and there was no pathologic history, no syphilis. However, a tentative course of antisyphilis treatment was instituted but no effect from it was apparent. The man of 28 soon required tapping and fifteen liters of fluid were siphoned out. During the three following years the patient had to be tapped at first every four months but later more frequently. Omentopexy was done (Talma operation) the fourth year but with only transient benefit. The necropsy findings after eight years showed typical polyserositis, iced liver and spleen, and chronic obliterating pericarditis. Tapping had been repeated eighty times and a total of 800 liters of fluid had been withdrawn. The man had been previously healthy except for typhoid at 11, and he had three healthy children. The second patient was a previously entirely healthy man of 49 and the disease ran an acute course in two months. The characteristic findings were restricted to the small intestine, causing multiple stenosis and agonizing colics. A laparotomy showed the small intestine enormously distended, with the characteristic iced appearance, the result of chronic peritonitis without effusion. The man died in collapse the second day. No signs of tuberculosis were found in either case. There seems to be no help for polyserositis except from operative measures and these usually come too late. The hope lies in some modification of the Talma operation—omentopexy—done before irreparable lesions have become installed. The trouble generally begins with a stormy onset and then passes into a chronic phase with recurring ascites, gradual weakening of the heart, edema of the legs and cyanosis. The patients are generally under 30 but middle age is not exempt.

Jahrbuch für Kinderheilkunde, Berlin

October, LXXVIII, No. 4, pp. 373-496

113 Mechanism of Cerebral Activity in Children. (Grundmechanismen der Arbeit der Grosshirnrinde bei Kindern.) N. Krasnogorski.
114 Factors which Stunt the Growth of Infants: Twenty-Six Cases. (Störungen des Langenwachstums der Säuglinge.) K. Stolte.
115 *Transillumination in the Diagnosis of Chronic Internal Hydrocephalus. (Die Strassburgersche Transparenzuntersuchung bei chronischem Hydrocephalus internus.) J. v. Bokay.
116 *Diphtheria Antitoxin Content of Human Blood Serum. H. Kleinschmidt.

115. **Transillumination in the Diagnosis of Chronic Internal Hydrocephalus.**—Strassburger in 1909 demonstrated hydrocephalus in a 3-months-old child with head of practically nor-

mal size. He had examined it under strong electric light in a dark room and had found the skull transparent. This transparency is present only when the thickness of the brain substance is not more than 1 cm. The bones of the child's skull are transparent under strong light, up to about the age of 3. Von Bokay gives histories of fifteen children with internal hydrocephalus whom he examined in this way. The degree of transparency depends on the thickness of the brain substance and the amount of fluid. The collection of fluid is frequently asymmetrical and the method gives information of practical value as to where puncture and drainage can be done most effectively and with least injury to the brain substance. It is particularly valuable in the diagnosis when the size of the head is almost normal and gives little or no indication of the condition. The findings in his cases are shown in eight colored plates.

116. **Diphtheria Antitoxin in Human Blood.**—Kleinschmidt concludes that the diphtheria antitoxin so frequently found in the serum of individuals who have not had diphtheria is due to latent infection with diphtheria bacilli. Protective substances must have been formed in sufficient quantity to avert an attack of the disease. He found antitoxin in the serum of two of eighteen infants free from any history of diphtheria, and in ten of sixteen others known to have had diphtheria up to a few months before and still harboring the bacilli. Technical details of his experiments are given.

Medizinische Klinik, Berlin

October 19, IX, No. 42, pp. 1709-1750

117 *Treatment of Embolism, Thrombosis and Gangrene. F. Lotsch.
118 *Treatment of Inflammation and Processes with Effusion. (Einwirkung parenteral eingeführter Kolloide und wiederholter Aderlässe auf die Durchlässigkeit der Gefässe.) F. Luithlen.
119 Improved Technic for Differential Atmospheric Pressure. (Die weitere Ausgestaltung der Unterdruckatmung für die Behandlung der Kreislauf- und Atmungsstörungen.) O. Bruns.
120 *Venous Thrombosis with Heart Disease. F. Glaser.
121 Acute Lymphogranulomatosis. H. Peiser.
122 Importance of Routine Cystoscopy. (Erfahrungen auf dem Gebiete moderner Urologie.) O. Kneise.
123 Kaolin-Glycerin Paste in Dermatology. P. G. Unna. Commenced in No. 41.
124 Döhle's Leukocyte Inclusion Bodies Not Peculiar to Scarlet Fever. M. Massini.

117. **Treatment of Thrombosis and Gangrene.**—Lotsch recapitulates the general view that the treatment of thrombosis lies essentially in prophylaxis. Passive exercise and light massage should be systematically applied to persons kept long in bed for any cause. With gangrene, the aim should be to ward off putrefaction. The surface should be kept dry with powder or superheated air, but he warns that the resistance of the tissues to heat is materially reduced, and great caution is required. Reports are accumulating of favorable results from local alternating hot and cold baths, changing from the hot to the cold water and back again repeatedly for fifteen minutes at a time. The alternation of anemia and hyperemia thus induced causes a gymnastic exercising of the vessels, and if kept up for a long time, up to several months, may realize great improvement. He says that fifteen cases are on record in which an attempt was made to extract the embolus in the pulmonary artery. Krüger's patient survived the operation for five days but then succumbed to pleurisy. Two other patients survived for fifteen and thirty-seven hours. In case of fat embolism, such as is liable to follow extensive fractures or crushing of the liver, it might be possible to expose the thoracic duct and divert its contents outward, as most of the fat is conveyed to the blood through the thoracic duct. In case of air embolism, especially when a vein is opened near the thorax, direct compression at once is the safest measure. The sound of the air entering the vein is never forgotten when once heard. A small amount of air is borne without harm, but when the blood in the right heart becomes foamy from admixture of air, the heart works in vain. As a last resort, the right ventricle might be punctured, to the right of the sternum, to release the air.

118. **Venesection and Gelatin in Treatment of Inflammation and Processes with Effusion.**—Luithlen has previously called attention to the modification in the test reaction of the skin after serum or colloidal substances have been injected. Recent research on serodiagnosis and serotherapy has confirmed his findings and also his assumption that the result has nothing to do with any property of the serum as an antigen but rather to the fact that the serum represents a colloidal substance and that it is to this colloidal property that it owes its efficiency in pregnancy dermatitis, etc. He has worked out a method of research to determine the permeability of the vessel walls under various conditions. About 100 c.c. of Ringer's fluid is injected into the abdominal cavity; half an hour later he injects into a vein in the ear 2 c.c. of a 10 per cent. solution of sodium ferrocyanid, and after intervals of one, two, three, four, six, eight and ten minutes, he withdraws a small amount of fluid from the abdominal cavity and examines it for the presence of the chemical. This series of tests is followed at once with a repetition of the procedure using 5 c.c. of a 2 per cent. solution of sodium iodid. The tests were made on rabbits, some of which had been previously treated with gelatin, some with colloidal silicic acid and some with serum, others with preceding venesection. The results show that there was marked delay in the passage of the intravenously injected chemical after the above preliminary procedures. On the other hand, the passage of the chemical into the abdominal cavity was notably accelerated when instead of the above, the animals had been treated beforehand with electrolytic substances or hydrochloric acid.

In short, the research reported demonstrates that parenteral administration of colloidal substances, albuminous or not, and repeated venesection materially reduce the permeability of the vessels in rabbits for chemicals introduced into the veins. These findings throw light on the benefit from Gilbert's autoserotherapy in pleurisy and peritonitis with effusion, and also on the benefit from repeated venesection in certain cases. They suggest that venesection deserves a prominent place in the treatment of various processes of an inflammatory nature with effusion, pneumonia, pleurisy, etc., as a reduction of the permeability of the vessels materially aids in recovery.

120. **Venous Thrombosis in Heart Disease.**—Glaser's patient was a young woman with mitral, aortic and tricuspid insufficiency who developed signs of obstruction of the superior vena cava. The right sternocleidomastoid muscle swelled first, then the parotid gland region on both sides, and the entire right side swelled enormously. Twenty-five cases of the kind are on record with necropsy in four; twenty-three of the patients were women, nearly all under 30. Chlorosis is probably a contributing factor.

Monatsschrift für Kinderheilkunde, Berlin

XII, No. 6, pp. 269-346

125 *Magnesium Sulphate in Treatment of Spasmophilia. N. Berend.
126 Variations in Weight on Withdrawal of Carbohydrates. R. J. Carneiro.
127 Case of Congenital Stenosis of the Intestine. K. Stolte.

125. **Magnesium Sulphate in Spasmophilia.**—Berend used magnesium sulphate subcutaneously in treatment in forty cases, twenty-seven of spasmophilia and fifteen of eclamptic children without spasmophilia. Detailed case histories and clinical charts are given. His initial dose was 0.2 gm. in the form of 15 to 20 c.c. of an 8 per cent. solution. He tried using 15 and 25 per cent. solutions, but with no better effect. Twice this dose could be given daily to infants without any toxic effects. The quickest and most intense effect was on the electric excitability of the muscles and the spasms of the hands and feet. It acts somewhat more slowly on the general spasms and Trousseau's sign, and least of all on spasm of the glottis. Results were generally obtained in twenty-four hours. and it was seldom necessary to continue the treatment longer than four or six days. Phosphorus and cod liver oil were given in conjunction with it after the second day. The two treatments supplement each other. There are two marked advantages with this over other forms of treatment: recurrence seems to be much rarer and the course of the spasmophilia is decidedly shortened. Moreover, with this treatment mother's milk is less of an essential. There is no danger of inanition because food does not need to be withdrawn as in other forms of treat-

ment. The only point to be insisted on in diet is that it must be poor in salts. The treatment is also of value in convulsions not due to spasmophilia if there is no cerebral irritation or disturbance of kidney function.

Münchener medizinische Wochenschrift

October 21, LX, No. 42, pp. 2321-2384

128 The Abderhalden Seroreaction in Epileptics. O. Binswanger.
129 *Electric Treatment of Stretched Abdominal Muscles in Parturients. (Behandlung der Bauchdecken und des muskulären Beckenbodens bei Wöchnerinnen mittels des Bergoniéschen Verfahrens.) G. Brommer.
130 *Silver Rod in Treatment of Fracture of Forearm. (Zur Behandlung von Vorderarmfrakturen mit Bolzung.) G. Schöne.
131 The Leading Ideas in Modern Physiology. A. v. Tschermak.
132 *Pathology of the Liver. W. Gundermann.
133 Salvarsan and Neosalvarsan in Concentrated Solutions. (Die Injektion konzentrierter Altsalvarsanlösungen mit der Spritze.) G. L. Dreyfus. (Intravenöse Injektionen von konzentriertem Neosalvarsan.) T. Katz and E. Saalfeld.
134 *Heart-Block Under Salvarsan. (Ueberleitungsstörung im Verlauf der Salvarsanbehandlung bei später Sekundärlues.) H. Fuchs.
135 *Acute Primary Diphtheritic Pneumonia. O. David.
136 Lead Meningitis. E. Plate.
137 Azotometer for Quantitative Determination of Urea, Uric Acid and Purin Bases in the Urine. A. Jolles.
138 Lay Praise of One Physician at Expense of Another. (Die falsche Behandlung oder der gelobte Arzt.) M. Nassauer.
139 The Rich Merchant and His Physician. (Die hohe Schule für Aerzte und Kranke.) M. Nassauer.
140 Disease of the Pancreas. A. Stauder. Commenced in No. 41.

129. Electric Exercise of the Abdominal Walls after Delivery.—Brommer applies Bergoniés method to exercise the muscles, without the cooperation of the patient, to restore tone to the abdominal wall in the puerperium. The method induces rhythmical contraction of the muscles without pain. The woman sits in a reclining chair which has large electrodes in the back and seat. The other electrode is laid on the abdomen and pressed firmly against the skin by bags of sand. The procedure was applied the fifth day after delivery for fifteen minutes, increasing on later days to forty-five minutes, with the weight of the sand bags up to nearly 70 pounds. No inconveniences or pain were ever experienced, while it was his impression that the muscles of the abdominal wall and floor of the pelvis regained tone with unusual rapidity and completeness. Encouraged by these results, he applied the method to patients after laparotomies. His experience with it in cases of obesity has also been encouraging, but not much success in this line can be realized with a confirmed and continuous large eater. The method is also useful to prevent atrophy after fracture of a limb. He reiterates in conclusion that this electric exercising of the muscles in the maternity and postoperative cases had a surprisingly good effect on the functioning of the intestines. The bowels moved regularly one or two hours after the sitting in two-thirds of the thirty parturients, and this effect was also apparent in the laparotomy cases. The article gives an illustration of a patient taking the treatment.

130. Treatment of Fracture of the Forearm with Supporting Rod.—Schöne uses a rod of pure silver, from 2.8 to 4 mm. in diameter, slightly rounded at the ends. He trephines the bone for the introduction of the rod and works it in through the bone marrow to reinforce the arm; the silver has also antiseptic power. Two illustrations show the exact technic. He has applied the method in six cases and consolidation followed rapidly in five and more slowly in the sixth patient.

132. Pathology of the Liver.—Gundermann found that ulceration developed in the stomach or duodenum in guinea-pigs after the left branch of the portal vein had been ligated, thus cutting off three-fourths of the liver. The clinical picture that resulted, the findings in the urine and after death, were all typical of true uremia, although a uremia of liver origin seems paradoxic. These experiences suggested that perverted functioning of the liver may be the cause of uremia in man. A number of facts that have been recorded sustain the assumption of the dependence of kidney functioning on the liver. In further experiments he ligated the common bile duct and the resulting cholemia also presented the clinical picture of uremia except for the absence of convulsions. The clinical symptoms and the findings after death were so closely alike under all these circumstances that the same causal moment must be postulated for both. It may be wise to drop the term "uremia" for "hepato-renal intoxication," and call "cholemia," "hepato-cholic intoxication."

134. Heart-Block Under Salvarsan.—Fuchs' patient was in the later period of the secondary manifestations of syphilis, the heart findings normal. He was given up to 2.3 gm. salvarsan in the course of nine weeks. Forty-eight hours after the last intravenous injection of 0.6 gm. of salvarsan, actual heart-block developed, the pulse dropping from 80 to 40; the diagnosis of heart-block was confirmed by the electrocardiogram. Fuchs explains this occurrence as due to the destruction of a nest of spirochetes in the bundle of His by the fifth injection of salvarsan. The endotoxins liberated by this destruction of spirochetes at this point caused such disturbance in the bundle that the heart-block resulted. As the toxins were absorbed, conditions returned to normal; in seven days in this case.

135. Primary Diphtheria of the Lung.—David states that a boy of 9 was taken with what was apparently pneumonia of the left lower lobe terminating in a crisis and followed by slight pleurisy. The child was apparently doing well when suddenly he seemed to be suffocating but was relieved by inhalation of oxygen and epinephrin. A pneumonia process had developed in the right lower lobe and the bronchi and trachea became obstructed so that an emergency tracheotomy was required. Diphtheric membranes were expelled through the opening; antitoxin was injected but the child died the thirteenth day after his first symptoms. Diphtheria bacilli were found in the lungs and air passages in pure cultures.

Virchows Archiv, Berlin

CCXIV, No. 1, pp. 1-160

141 *Pathology of the Thymus. C. Hart.
142 Effect of the Thymus on the Organism. Y. Yokoyama.
143 *Relation of the Thymus to Adrenal Secretion. L. Adler.
144 Early Stage of Fibrosis in Tuberculous Lungs. (Ueber Karnifikation in tuberkulösen Lungen.) W. Ceelen.
145 A Normal Substance in the Prostatic Epithelium of Men and Bullocks which has the Property of Double Refraction. E. Sehrt.
146 Case of Malignant Neuroblastoma of the Sympathetic Nerve. N. Auitschkou.
147 Histology of Nephritis Caused by Vinylamin. Oka.

141. Pathology of the Thymus.—Hart finds that the thymus may persist and become enlarged but the functioning may be subnormal. The so-called status thymico-lymphaticus is due not to excessive thymus function but to a constitutional abnormality expressing itself in disturbances of the whole internal secretory system. The enlargement of the thymus is only one of its manifestations. The hyperplastic thymus seems to have a toxic effect on the heart. In many cases of exophthalmic goiter, enlargement of the thymus precedes the appearance of thyroid symptoms.

143. Relation of the Thymus to Adrenal Secretion.—Adler concludes from his research that the thymus secretion has the effect of lowering the tonus of the vascular system. Therefore, if the thymus secretion is increased, the adrenal secretion must also be increased to overcome this hypotonic effect.

Wiener klinische Wochenschrift, Vienna

October 23, XXVI, No. 43, pp. 1737-1784

148 Pernicious Anemia. E. v. Neusser.
149 Radium in Therapeutics. (Radium als Heilmittel.) W. Falta.
150 *The Blood in Werlhof's Disease. (Blutgerinnungsfähigkeit, Viskosität und Blutplättchenzahl bei Morbus maculosus Werlhofi.) O. Steiger.
151 Stenosis of Left Pulmonary Vein plus Paralysis of Left Recurrent Nerve; Four Cases. B. Purjesz.
152 Medical Inspection of Schools. (Zur Schularztfrage.) A. Schattenfroh.

150. The Blood in Werlhof's Disease.—Steiger gives the details of his research in two cases of this disease in which numerous tests were applied. The results showed that the coagulating power of the blood was very much reduced; there is evidently lacking some substance or substances, or they are inert for some reason, which are necessary for coagulation. The viscosity is also much reduced, as also the number of blood platelets.

Zentralblatt für Chirurgie, Leipsic

October 25, XL, No. 43, pp. 1657-1704

153 *Tetany with Abdominal Disease a Bad Sign. E. Bircher.
154 *Acute Congestion of the Liver from Acute Cardiac Insufficiency. (Ueber perakute Leberschwellung.) M. v. Brunn.

153. **Tetany with Peritonitis.**—Bircher has made a special study of symptoms suggesting tetany among 537 patients with various stomach and intestinal affections. They were noted in twenty-eight cases, and twenty-two of these patients died; all had peritonitis from perforation of a gastric or duodenal ulcer or appendix or from ileus, except in one case of fatal postoperative dilatation of the stomach and three fatal cases of peritonitis from other causes. No symptoms suggesting tetany were noted in twenty-five cases of simple gastric ulcer, nor in eighty-five of gastric cancer or hundreds of cases of simple appendicitis. The conclusion seems evident that absorption of toxins from a badly diseased peritoneum is responsible for the tendency to tetany, and consequently signs of it render the prognosis grave, especially tonic twitching in the arms and legs, the Chvostek facialis sign and the Trousseau sign. In a number of the cases it proved possible also to elicit the Schlesinger leg sign.

154. **Acute Congestion of the Liver.**—Von Brunn reports a case similar to the three recently published by Ortner and summarized in these columns November 1, p. 1670. Brunn's patient was a young man suddenly taken with abdominal pain increasing to extremely severe collapse in twenty-four hours. Examination then showed the heart with normal outlines, sounds pure, pulse 22 with irregular intervals, the abdomen retracted, the upper portion tender and stiffening at any attempt at palpation, the lower portion not tender, moderate dulness over the right upper abdomen, extending to below the umbilicus. The diagnosis veered toward perforation of the stomach, but the exploratory laparotomy disclosed no signs of inflammation and only a much enlarged liver and an enlarged and tough spleen. Relief was almost immediate after the exploratory operation, and the young man was soon completely restored. Eleven days later the heart was found extending a finger-breadth beyond the left nipple line and a systolic murmur varying in intensity was audible over the entire heart. This murmur was still perceptible nine days later, but the liver was apparently entirely normal. He explains the acute congestion in the liver in the same way as Ortner, Nature driving the blood into the liver in case of acute insufficiency of the heart, thus giving the heart a chance to recuperate as by a venesection.

Zentralblatt für Gynäkologie, Leipsic

October 25, XXXVII, No. 43, pp. 1581-1612

155 Sterilization of Pregnant Tuberculous Women. (Erfolge und Technik der einzeitigen Schwangerschaftsunterbrechung und Sterilisierung bei Tuberkulose der Lungen.) P. Werner.
156 Serotherapy of Eclampsia. (Ueber Schwangerschaftstoxikosen und ihre Behandlung mit Serum und Ringer'scher Lösung.) F. Engelmann.

Zentralblatt für innere Medizin, Leipsic

October 25, XXXIV, No. 43, pp. 1073-1096

157 Blood Findings. Especially Eosinophilia, with Spring Catarrh. (Blutbefunde beim sog. Frühjahrskatarrh.) Steiger and Strebel. Commenced in No. 42.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 21, XXXIV, No. 126, pp. 1319-1326

158 *Treatment of Pyelitis by Lavage of the Renal Pelvis. (Sulla cura delle pieliti col cateterismo ureterale e lavaggio del bacinetto renale.) F. Cuturi.

158. **Local Treatment of Pyelitis.**—Cuturi insists that direct medication of the kidney pelvis through the ureter catheter is absolutely indispensable in all cases of pyelitis except those of tuberculous or concrement origin. He flushes out the pelvis in this way every day and instills a 1, 2, or 4 per cent. solution of silver nitrate not oftener than once in three or four days, as a rule, washing it out well afterward. In a case of bilharzia pyelitis reported he injected 5 c.c. of a 1 per cent. solution, rinsing it out after a few minutes. The pain was relieved at once. The procedure was repeated ten times on alternate days, gradually increasing the strength to 3 per cent., and a few supplementary times at week or fortnight intervals later. The patient was soon clinically cured. Eight applications conquered the pyelitis in a gonococcus case described and five in a colon-bacillus case of puerperal pyelitis.

Rivista-Ospedaliera, Rome

October 15, III, No. 19, pp. 837-875

159 *Hereditary Ataxia in Pellagrin Family. L. M. Ruggieri.
160 Medical Fees in Ancient Times. (Gli onorari dei medici nell'antichita.) P. Picca.

159. **Friedreich's Disease in Brother and Sister.**—The first symptoms of the ataxic paraplegia developed at about the age of 12 in the brother and sister whose cases are reported. The patients are now 27 and 16. The young man had malaria of the tertian type as a youth, and all the members of the family show more or less signs of pellagra. Ruggieri discusses whether the pellagra may have been responsible for the disease. The type of paraplegia and ataxia seems to be identical in both. The disturbance in gait developed gradually, fully two years elapsing before the ataxia was well defined. The illustrations show the typical deformity of the feet.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

September 27, II, No. 13, pp. 985-1064

161 *Fatal Morphin Poisoning or Fatal Diabetic Coma? P. K. Pel.
162 Fermentation at 46° as Test for Drinking Water. (De gistingsproef bij 46° als hulpmiddel bij wateronderzoek.) C. Eijkman.
163 *Improved Technic for the Wassermann Reaction. G. Kapsenberg.
164 *Traumatic Neurosis. P. B. de Haan.

October 4, No. 14, pp. 1065-1152

165 *Diphtheria. J. L. Labberté and L. Talsma.
166 *Congenital, Familial Edema of the Legs. J. C. van Vliet.

161. **Poison or Diabetes?**—Pel discusses a recent medicolegal case to emphasize the necessity for a body of qualified medical experts appointed by the state to pass on all the forensic questions in cases like the one described. A man of 41 died with symptoms of diabetic coma. Weeks later, 0.0256 gm. of morphin was found in the exhumed body. Only the chemical diagnosis had weight with the court at the trial of the person suspected of having poisoned the deceased. All the clinical symptoms of the diabetic coma were systematically ignored in the evidence although they had been very prominent, in contrast to the symptoms from the morphin.

163. **Improved Technic for the Wassermann Test.**—Kapsenberg advises the use of the water-bath instead of incubating the test-tubes for the Wassermann test. This materially shortens the time required for the test. Half an hour is sufficient to read the results when the water-bath is used. The test-tubes are affected by the temperature of the water much sooner than in an incubator, and he states that the findings are more reliable. He says further that it is often difficult to procure fresh material for the antigen and, as usually prepared, it is not durable. These drawbacks can be avoided by using human heart tissue for the purpose, prepared in the form of a dry powder which is always ready for use and seems to keep perfectly. The antigen prepared from the heart powder according to his method is not hemolytic and does not inhibit the hemolysis from the complement. He never witnessed pronounced inhibition of hemolysis with a non-syphilitic serum.

164. **Traumatic Neurosis.**—The accident to the foot bringing on the neurosis occurred while the letter carrier was on duty. De Haan discusses in connection with this case the various phases of workmen's compensation and accident insurance. He warns that the indemnity should not be large in such cases, as the patient must learn to be self-reliant and not give up to chronic invalidism and thus exert a bad influence on subsequent cases of the kind. The amount of earning capacity left for the same or another occupation is also an important factor in estimating the compensation to be allowed.

165. **Diphtheria.**—There were 130 cases of diphtheria in the last two years at Krommenie, with a population of only 4,000. A careful epidemiologic study of all the cases is here summarized. There was paralysis of the heart in 34 cases and seven in this group died; 15 cases of paralysis of the soft palate;

4 of accommodation, and 1 of the internal rectus muscle; 3 of the back and 1 of the calf muscles, but the paralysis did not prove permanent in any instance. On account of the apparent mildness of the epidemic, antitoxin was applied in only 42 cases and 20 of these children had paralysis in some form; in 4 the paralysis of the heart proved fatal. Of the 88 children not given antitoxin, 3 died of cardiac paralysis of the 11 who had paralysis in some form. Of the 12 given antitoxin the first day, 6 developed paralysis and 1 died. Of the 17 receiving the antitoxin the second day, 8 developed paralysis and 2 died of cardiac paralysis. Of the 13 children who were given antitoxin at a still later date, 6 developed paralysis and 1 died from heart failure and 1 from the severity of the diphtheria. The paralysis seemed to occur in waves during the epidemic, some periods furnishing far more cases than others. Ninety-five bacillus carriers were found among 1,378 children tested for the bacilli. The carrier children were dismissed from school but no instance of infection from them is known. The epidemic, however, died out when the schools were closed. A number of the throat smears were negative at several examinations but later gave positive findings.

166. **Familial Edema of the Legs.**—Van Vliet gives the chart of a family in which congenital edema of the legs occurred in thirteen members in four generations, ten males and three females. In the six clinical cases no cause for the familial edema could be discovered.

Brazil-Medico, Rio de Janeiro

September 22, XXVII, No. 36, pp. 378-389

167 Acute Inflammation of Undescended Testicle. (Ectopia testicular.) F. Luz.

October 1, No. 37, pp. 390-401

168 Gait in Organic Hemiplegia. (Nota sobre o andar lateral na hemiplegia organica.) A. de Castro.

Semana Medica, Buenos Aires

September 25, XX, No. 39, pp. 696-756

169 Operative Treatment of Extreme Myopia. L. G. Doods and A. Gowland.
170 History of Cholelithiasis. J. M. Jorge.

Hospitalstidende, Copenhagen

October 8, LVI, No. 41, pp. 1197-1236

171 *Impressions of America. (Indtryk fra en Rejse i Amerika, Maj-Juli, 1912.) T. Rovsing.

October 15, No. 42, pp. 1237-1256

172 Cultivation of the Virus and Parasites of Poliomyelitis, Rabies, Scarlet Fever and Variola. H. Noguchi.

October 22, No. 43, pp. 1261-1292

173 *Polypous Gastritis. E. Meulengracht.

171. **Impressions of America.**—Rovsing depicts in flattering terms his impressions during his recent trip to America. He compares the various surgical centers he visited and the technic of the surgeons, and remarks that the tendency to copy after European technics and models is a distinct hindrance to the development of an independent surgery in America. He adds that American surgeons believe so implicitly in the supremacy of European surgeons that the result is a certain lack of confidence in themselves.

173. **Polypous Gastritis.**—The findings are illustrated of the gastritis with production of polyps discovered at necropsy of a woman of 66 and a man of 82. It had caused slight or no clinical symptoms. There was no sign of cancerous degeneration. Complicating malignant disease is known in only four of the twenty-four cases on record of polypous gastritis.

Hygiea, Stockholm

September, LXXV, No. 9, pp. 849-990

174 *Treatment of Empyema of the Pleura by Tapping and Inject- [illegible] and Glycerin. G. Nyström.
175 [illegible] from Chilling. O. Lindbom.
176 *Syphilis of the Lung. H. Lindvall and J. Tillgren.

174. **Empyema of the Pleura.**—Nyström reports in full fourteen cases of pleural empyema treated by tapping and injection of formaldehyd in glycerin. The results were not encouraging, and he says this method should by no means take rank with thoracotomy. Helling has been more successful with it, and Maldarescu reported in 1910 good effect from repeated injection of 10 to 12 c.c. of a 10 per cent. alcohol solution of alphanaphthol in seven cases of empyema.

175. **Hemoglobinuria from Chilling.**—Lindbom reports the minute details of a typical case of paroxysmal hemoglobinuria. The patient was a sailor of 46 and the attacks could be brought on by holding the hands in ice-water for fifteen minutes. The Wassermann test was positive. Some benefit was derived from cholesterin given in six intramuscular injections in the dose of 0.5 gm. cholesterin, in a 10 per cent. suspension in physiologic salt solution. The Wassermann reaction became negative after this, and the test chilling of the hands induced only a rudimentary attack of hemoglobinuria, and there was no further attack until forty days after the close of the treatment. Cholesterin was given later in an oil emulsion by the mouth, but it did not display any efficacy by this route as a typical attack followed next day on the test chilling of the hands. As cholesterin checks the Donath-Landsteiner reaction in the test-tube, Lindbom suggests that the autolysin involved in this reaction and the substances giving the Wassermann reaction may be identical.

176. **Pulmonary Syphilis.**—In the two cases described the findings in the lungs were not actually specific for syphilis, but the changes in the lungs were accompanied by adjacent lesions of unmistakable syphilitic nature, and the arteries also showed signs of syphilitic injury. The first case is interpreted as a true syphilitic affection of the lung; the second case as merely a patch of hepatization in the lung of a syphilitic. The first patient had no history of tuberculosis; the present lung affection had run its course in less than a year; there were no consonant râles and the sputum was merely catarrhal.

Ugeskrift for Læger, Copenhagen

October 9, LXXV, No. 41, pp. 1657-1684

177 *Combination of Various Forms of Arhythmia. O. V. C. E. Petersen.
178 *Hereditary Tendency to Hemeralopia. C. F. Heerfordt.

October 16, No. 42, pp. 1685-1716

179 The Virus of Fowl Leukemia. (Undersøgelser over Hønseleukaemiens Virus.) V. Ellermann.
180 Appendicitis in Femoral Hernia; Two Cases. H. Kaarsberg.

177. **Combined Arhythmias.**—Petersen reports four cases of a combination of various forms of arhythmia. In the first a man of 65 had complete heart-block associated with pulsus alternans. In the second case, the complete heart-block was associated with auricular flutter. In the third, the Adams-Stokes syndrome developed probably as a manifestation of poisoning from digitalis. Poisoning from digitalis was also probable in the fourth case in which auricular flutter was accompanied by coupled beats (bigeminia cordis). The appearance of coupled beats warns to suspend the digitalis, as a rule, but in the case described conditions grew so much worse on suspension of the digitalis for a few days that it was resumed again. The various curves of these cases are compared and the necessity for close supervision of patients taking digitalis is emphasized anew. The signs of intoxication may develop suddenly, even before the full therapeutic action has been manifested. Pulsus alternans is easily overlooked, he remarks, but it can generally be diagnosed by applying the cuff to the upper arm. Treatment is mainly by bed rest and a diet to spare the heart. Digitalis is not required unless for severe symptoms of insufficiency, and then only with great caution; it may correct the pulse in some cases but there is no doubt that pulsus alternans may develop as a result of digitalis poisoning. Auricular flutter with complete heart-block is not corrected by digitalis; the auricular flutter persists unmodified as a rule.

178. **Inherited Hemeralopia.**—Heerfordt explains night blindness and day blindness as the result in the majority of cases of a torpid condition of the retina, which in turn is the result of a general influence on the functioning of the retina from a defective nutritional condition. This so-called idiopathic form is important in general practice as the disturbance is so typical and as it is by no means rare, while it responds so promptly and effectually when the diet is changed to include proper amounts of fat and egg albumin. He urges practitioners to be on the lookout for it in children.

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SHOCK *

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The theory of shock so ably advocated by my gifted friend Professor Henderson and my theory may in many important respects be harmonized. It seems best, however, to leave that to the future and to proceed at once to the presentation of the summaries of a long series of experiments and clinical observations in support of the kinetic theory which I have proposed elsewhere. This theory is called the kinetic theory because it is based on the phenomena and the consequences of the transformation of latent energy into kinetic energy as an adaptive response to environmental stimuli.

In this paper, therefore, I shall discuss the pathology of traumatic shock; of emotional shock; of toxic and foreign proteid shock; and of drug shock. These several forms of shock will be considered in their acute and in their chronic stages and certain probable relations will be indicated between the several forms of shock and certain diseases, such as indigestion, neurasthenia, glycosuria, Graves' disease, cardiovascular disease and nephritis.

Let me at once state my principal conclusion—that all forms of shock are caused by overstimulation and consequent exhaustion; that the brain-cells show physical changes corresponding to each stage of the cycle of shock, and that with each shock-producing agency which I have studied there is shown in the brain-cells a hyperchromatic stage followed by a hypochromatic stage.

The organs of the body especially involved in shock are certain organs whose function is that of converting latent energy into kinetic energy in response to adaptive stimulation. These organs—among which are the brain, the thyroid, the adrenals, and the muscles—I have called the kinetic system because of this peculiarly kinetic function. In response to environmental stimuli of any sort these organs convert latent energy into motion or into heat. In this thesis, however, I shall consider only the conversion of latent energy into motion as a response to the need of self-preservation against physical injury or infection.

As evidence, will be presented clinical and experimental observations of the energy-producing results of physical injury alone; of physical injury under inhalation anesthesia; of the emotional stimulation of fear alone; and of foreign proteid and toxic stimulation alone; and their results will be considered in their relation to the brain, the adrenals and the thyroid.

TRAUMATIC SHOCK

A working histologic standard for the brain was established and compared in a large number of brains with the immediate and later effects of physical injury under inhalation anesthesia in an intact animal and in a spinal dog; of physical injury in dogs with crossed circulation; and of physical injury, within the territory of anesthesia, in dogs under local anesthesia; of injections of toxins; of injections of strychnin and morphin; of various inhalation anesthetics; of severe hemorrhage and of fatigue from both physical exertion and prolonged wakefulness.

In case of physical injury alone inflicted on normal dogs under anesthesia, in the brain-cells was found first a stage of hyperactivity characterized by hyperchromatism; and later a stage of exhaustion characterized by chromatolysis, by alteration of nucleocytoplasmic relation, by rupture of the nuclear and the cell membrane and, finally, by disintegration. These changes were most marked in the cortex and the cerebellum, less marked in the medulla and in the cord.

The brain-cells showed no change when the trauma was limited to territories disconnected from the brain by severing the spinal cord, or by local anesthetization. When the circulations of two dogs were crossed and but one dog was traumatized, brain-cell changes were found only in the dog traumatized. Dogs overtransfused and traumatized showed brain-cell changes. Under nitrous oxid the brain-cell changes after equal trauma caused about one-third as much change as under ether. When the vitality was previously reduced by emotion, by physical exertion, by toxins, by infection, by hemorrhage, by excessive thyroid feeding, by adrenalectomy—or by any cause that reduces the vital power — greater changes were found after equal trauma, the endurance of the animal being in proportion to its vitality at the beginning of the experiment.

Testing the effects of shock-producing traumatism on the output of epinephrin by Cannon's method I found no increased epinephrin output resulting from trauma under anesthesia. In addition there were no gross changes observed in the thyroid in either the laboratory or the clinic as a result of shock-producing trauma.

From these observations I conclude that ether anesthesia offers no protection to the brain-cells from the effect of trauma; and that the lipoid-solvent anesthetics break the arc causing consciousness beyond the brain-cells somewhere in the efferent path; hence the afferent stimuli reach and modify the brain-cells as readily as if no anesthetic had been given. I conclude therefore that the brain-cell changes are due to the discharge of energy in a futile effort to escape from the injury.

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* Paper read before the Seventeenth International Congress of Medicine, London, England, August 6-12, 1913.

EMOTIONAL SHOCK

In rabbits subjected to the emotional stimulus of fear alone the brain-cells showed precisely the same changes as those which resulted from physical injury, namely, an immediate stage of hyperchromatism and a later stage of chromatolysis: a disturbance of the nucleoplasmic relation and the final disintegration of many cells.

As a result of strong fear repeated daily for two weeks as many as 18 per cent. of the Purkinje cells were actually destroyed, and many animals died. In cats the emotion of rage caused a striking increase in the output of epinephrin, but in cats subjected to fear and rage a month after division of the major and the minor splanchnic nerves, there was no increase in the output of epinephrin. In rabbits acute fear caused a rise in temperature of from 1 to 3 degrees, excepting in thyroidectomized animals whose temperature remained subnormal. In rabbits nephritis often resulted from repeated fright.

TOXIC AND FOREIGN PROTEID SHOCK, ANAPHYLACTIC SHOCK

To determine the histologic changes produced by toxic and foreign proteid shock, and by anaphylactic shock, the brains of many human beings who had died of infections and of eclampsia were examined, and in the laboratory were studied the brains of many animals in which there had been injected toxins of streptococci, staphylococci, colon bacilli, gonococci and tetanus bacilli; the brains of animals to which there had been given intravenously peptones, leucin, skatol, extract of feces, alien blood-serum; of animals in anaphylactic shock; of animals in which placental extract had been injected. In all instances observations were made as to the effect of the injections on the epinephrin output, and the brain-cell changes. In every instance the brain-cells showed precisely the same changes as were seen under traumatic injury, and emotional injury—first a stage of hyperchromatism, followed by a stage of chromatolysis and cell disintegration. Of special interest was the fact that these various toxins and foreign proteids, as well as anaphylaxis and placental extract, produced a large increase in epinephrin output. But if the nerve-supply of the adrenals had been first divided, then these agents caused no increased output of epinephrin; or if deep morphin narcotization had been first induced there was no increased epinephrin output in toxic and anaphylactic shock.

DRUGS—ANESTHETIC, NARCOTIC AND STIMULANT

Many observations of the brain-cells and the epinephrin output were made after the administration of ether, urethane, nitrous oxid and morphin. None of these caused either brain-cell changes or increased epinephrin output.

Here again it was of special significance to note that, under heavy morphin dosage, there was no increased output of epinephrin as a result of anaphylactic shock. It was found also that the normal output of epinephrin was diminished by morphin. Strychnin, on the other hand, caused brain-cell changes of precisely the same type as did the emotions, toxins, and foreign proteins, that is, at first hyperchromatism and later chromatolysis; and there was also increased epinephrin output. Previous division of the adrenal nerve-supply prevented the increased output of epinephrin.

These experimental results may be summarized as follows: All the factors that cause the activation of the kinetic system, whether emotional, toxic, foreign protein, or drug, produce identical brain-cell changes and increased epinephrin output. On the other hand, the anesthetics and the narcotics cause neither brain-cell changes nor increased epinephrin output, while strychnin causes both. Clinically, it is known that those agencies that in my experiments were proved to cause an increased activity of the brain and the adrenals, also aggravate cases of Graves' disease. It is known also that in those cases of Graves' disease in which changes in the size of the thyroid may be noted, increase in its size is seen as a result of emotional excitation; of infections; of toxemia, and of intense physical and mental work. There is strong clinical evidence, therefore, of the activation of the thyroid by the same influences that activate the brain and the adrenals.

I have shown that in traumatic shock, emotional shock, foreign protein shock, and strychnin shock, identical physical changes in the brain-cells are found. Excepting in traumatic shock under inhalation anesthesia the adrenal glands are activated by the same agencies that cause work changes in the brain. Clinically it is known that the same influences cause thyroid activation.

I conclude, therefore, that shock is a work-exhaustion phenomenon; that the brain, the adrenals, the thyroid and the muscles have but one way of responding to stimuli; and that the conversion of energy is through the activity of these kinetic organs. What work is done in response to foreign protein stimulation? Through the heat-producing activity of the kinetic system foreign proteins such as bacteria are destroyed. Since heat interferes with the growth of bacteria, I must believe that fever is an adaptive reaction to the presence of bacteria in the body and that it is produced by the conversion of latent energy into heat through the same mechanism that converts latent energy into motion. Hence after stimulation by foreign proteins with resultant fever the work changes seen in the brain, the thyroid, the adrenals, and in all parts of the kinetic system are the same as the work changes seen after the conversion of energy into motion.

Shock, then, is the result of an intense stimulation of the kinetic system which leads to physical changes in the kinetic system and which if carried far enough exhausts the system and even destroys some brain-cells. The kinetic system is constantly activated so long as there is life, but normal activation does not produce exhaustion. If normal activity of the kinetic system be exemplified by walking, shock might be exemplified by the exhaustion caused by a Marathon race. The differences between normal processes and shock is that of intensity, not of kind. From these premises it becomes obvious that the exclusion of both traumatic and emotional stimuli will wholly prevent the shock of surgical operations.

When the kinetic system is continuously or intermittently overstimulated through a considerable period of time, so long as all the links in the kinetic chain take the strain equally, the result will be excessive energy conversion, excessive work done. Usually under stress, however, some one link in the chain will be unable to take the strain and then the evenly balanced work of the several organs of the kinetic system is disturbed. If the brain does not take the strain, then neurasthenia, nerve exhaustion, or even insanity, will follow. If the thyroid is not able fully to take the strain, it undergoes hyperplasia, which in turn may result in a colloid goiter or in exophthalmic goiter. If the adrenal does not take the strain, there may be developed cardiovascular disease or glycosuria.

From the foregoing one is able to understand the muscular weakness following fever; one can understand why the senile have neither muscular power nor strong febrile reaction; why long-continued infections produce pathologic changes in the organs constituting the kinetic chain; why the same pathologic changes result from various forms of activations of the kinetic system. In this hypothesis we find a reason why cardiovascular disease may be caused by chronic infection, by autointoxication, by overwork, or by emotional excitation. We see now that the reason why we find so much difficulty in differentiating the numerous acute infections from each other is that they play on the same kinetic chain. Our postulate harmonizes the pathologic democracy of the kinetic organs, for it explains not only why in many diseases the pathologic changes in these organs are identical, but why the same changes are seen as the result of emotional strain and overwork. It can thus be understood how either emotional strain or acute or chronic infections may cause either exopthalmic goiter or cardiovascular disease; how chronic intestinal stasis with the resultant absorption of toxins may cause cardiovascular disease, neurasthenia, or goiter. Here is found an explanation of the phenomena of shock, whether the shock be the result of traumatic or psychic stimuli, or of a surgical operation with its combination of both psychic and traumatic elements.

This conception of the kinetic system has stood a crucial clinical test by making possible the shockless surgical operation. It has offered a plausible explanation of the cause and the treatment of Graves' disease. Will this kinetic theory stand also the clinical test of controlling that protean disease bred in the midst of the stress of our present-day life? Present-day life in which one must ever have one hand on the sword and the other on the throttle, is a constant stimulus of the kinetic system. The force of these kinetic stimuli may be lessened at the cerebral link by intelligent control; a protective control is empirically attained by many of the most successful men. It may be broken at the thyroid link by dividing the nerve-supply, reducing the blood-supply, or by partial excision; or if the adrenals feel the strain, the stimulating force may be broken by dividing their nerve-supply. No theory is worth more than its yield in practice, but the straw of clinical evidence from a single case points toward a new method of control of cardiovascular disease. I have proved that animals remain in apparently good health after the division of their adrenal nerve-supply, and in one human patient with cardiovascular disease in whom the adrenal nerve-supply was divided the blood-pressure gradually fell and remained at a lower level than prior to the operation. The patient is in good condition. As it stands alone, however, this case proves nothing.

SUMMARY

There is a group of organs whose function is the conversion of potential into kinetic energy. These organs form a kinetic system. Among the organs forming this system are the brain, the thyroid, the adrenals, and the muscles. The kinetic system converts latent energy into motion or heat in response to adequate stimuli. If the stimuli are overwhelmingly intense, then the kinetic system—especially the brain—is exhausted, even permanently injured. This condition is acute shock. If the stimuli extend over a period of time and are not so intense as to cause an immediate breakdown or acute shock, their repetition may cause the gradual exhaustion of the kinetic system—this condition may be called chronic shock. Either acute or chronic shock may be measurably controlled by weakening or breaking the kinetic chain at any point. This has already given us the shockless operation and it opens a possibility of controlling certain chronic diseases of that intensely kinetic organism, civilized man.

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THE RÔLE OF THE TENDO ACHILLIS IN THE ETIOLOGY OF WEAK-FOOT [*]

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It is a modern conception that weak-foot, or flat-foot, (insufficientia pedis—Schanz) is primarily caused by a loss of balance of the muscles of the leg and foot; that the interference with the proper function of these various groups of muscles which is caused by abuse, disuse, injury or disease, will be followed by weakness of one or more of these muscular groups; that from this there results a disturbed relationship of function between the various individual muscles of the leg, and finally impairment of the carrying power of the foot.

Huebscher[1] has shown that the group of muscles forming the Achilles tendon (gastrocnemius, soleus and plantaris), has the same volume as all the remaining muscles of the leg combined and probably for that reason has approximately the same relative strength. It is not to be wondered at that interference with the proper function of this powerful group of muscles, caused by shortening, would interfere materially with the proper use of the foot.

While the relationship of the short Achilles tendon to weak-foot has been written of from time to time, sometimes very fully, sometimes in cursory fashion, there are still a great many able articles which treat of the subject of weak-foot, yet which devote no time to this etiologic factor.[2] That a short Achilles tendon often accompanies a rigid weak-foot is well known.[3] In fact, a part of the proper treatment of such a rigid weak-foot consists either in division or in the lengthening of this large tendon.

The fact that a shortened Achilles tendon is a causative factor in many cases of beginning weak-foot is not of new observation. Schaffer[4] of New York was the first in this country to call attention to this. His article on the subject is worth reading in full. Shortly before publishing this paper, Schaffer made the statement, perhaps a little too comprehensive, that nearly every case of flat-foot which he sees presents a shortened tendo Achillis.

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[*] Read in the Section on Orthopedic Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

1. Huebscher: Ueber den Pes Valgus, Ztschr. f. Orthop. Chir., 1904, xiii, 73.

2. Osgood, R. B.: The Comparative Strength of the Abductor and Adductor Groups in the Foot, Am. Jour. Orthop. Surg., 1909, v, 298. Blodgett, W. E.: Analysis of One Thousand Cases of Static Foot Trouble, Am. Jour. Orthop. Surg., 1904, ii, 146. Ochsner, E. H.: Potential and Acquired Static Flat-Foot, The Journal A. M. A., Nov. 23, 1907, p. 1742. Hovorka, Otto: Die Bisherige Erfolge der Plattfuss-Chirurgie, Ztschr. f. Orthop. Chir., 1906, xvi 328. Gocht: Sehnenoperation bei Pes plano-valgus, Ztschr. f. Orthop. Chir., 1905, xiv, 295.

3. Schultze, F.: Die Behandlung des statischen Plattfusses mittelst des Redressement forcé und der Sehnenplastik, Ztschr. f. Orthop. Chir., 1904, xiii, 270. Antonelli, I.: Zur Therapie des Plattfusses, Ztschr. f. Orthop. Chir., 1904, xiii, 666. Osgood, R. B., The Treatment of Faulty Weight-Bearing in "Weak" and "Flat"-Feet, Am. Jour. Orthop. Surgery, 1906, iv, 137. Hoffa, A.: Lehrbuch der Orthopädischen Chirurgie, p. 889. Whitman, R.: Orthopedic Surgery, p. 691.

4. Schaffer, Newton M.: Flat Foot, Its Causes and Treatment, New York Med. Jour., 1897, lxv, 717.

Soon after the publication of Schaffer's paper, there appeared, in the literature, sporadic references to this subject; some authors laying stress on the relationship that exists between the two conditions. Bradford and Lovett[5] distinctively mention this in their text-book as a cause for weak-foot.

The cause of the shortening of the heel cord is often not far to seek when we remember the high-heeled shoes that women wear. Hoffman[6] says: "The high heel, especially the one placed well forward, compels the wearer to stand largely on the front of the foot, which must bear more than its proportionate share of the body weight. The habitual wearing of the high-heeled shoes leads to shortening of the calf muscles through accommodation to the continually assumed attitude. This is probably the reason that a large percentage of middle-aged women cannot dorsiflex the foot to quite a right angle without relaxing the calf muscles by bending the knee."

In my own experience I have seen many cases of beginning weak-foot in adolescents who have never worn a high-heeled shoe. For the cause of the shortened heel cord in these cases, I have no explanation. Blodgett[2] and Williams[7] came to almost identical conclusions in two interesting statistical studies regarding the relative frequency with which a shortened tendo Achillis occurs in patients complaining of weak-foot. Neither, however, seems to have considered the possible etiologic relationship of the shortened heel cord to the symptoms. Blodgett, in an examination of 1,000 patients, finds evidence of shortened heel cord in 175 cases, or 17.5 per cent. Williams finds a shortened Achilles tendon in 65 out of 300 cases, or 18.3 per cent. The great majority of Williams' patients with shortened Achilles tendon were women and Williams blames high heels for this condition.

Abbott and Pingree[8] have done some interesting experimental work on the normal balance of the foot. Among other things, they have shown (Experiment 1), that when the heel cord is shortened artificially in a dissected weak-foot, it is impossible to raise the arch to the normal position by traction on the anterior and posterior muscles; but, if the tendo Achillis is divided, that the inner border of the foot can then be easily raised to the desired height. In other words, the tibialis anticus and posticus are working under disadvantageous conditions when the heel cord is short.

Before I knew of the existence of Schaffer's classic work, I was able to demonstrate to myself in a few dissections of the foot that when the heel cord was shortened artificially so that dorsiflexion was impeded, a little more movement of the anterior portion of the foot was made possible by vicarious movement in the mediotarsal joint; this movement being in the sense, not only of dorsiflexion, but also of pronation.

Then I understood why it was that a patient with a shortened heel cord was able to bring the foot a little more toward a right angle when the foot was slightly abducted. In practice, I have found that some of my most obstinate cases of weak-foot present the condition of a shortened heel cord. For the last two years, I have not hesitated to advise section of the tendo Achillis in these cases preparatory to the usual well-accepted forms of treatment of weak-foot, believing that, when present, the shortened heel cord stood in etiologic relationship to the symptoms.

I now have fifteen cases in which the time since operation exceeds one year. All of these patients are walking much better than they did before the operation. From what I can learn, every one is satisfied and pleased with the results of the operation. I have always divided the tendo Achillis subcutaneously, usually cutting it obliquely; occasionally dividing it according to the method of Bayer. One case-report may serve as an example of all of them:

Case 1.—Miss R., aged 38, a housekeeper, stands much of the time, wore high-heeled shoes years ago and comes with typical symptoms of weak-foot. There is pain on arising from bed, also aching feet and inability to walk any distance without discomfort. She has tried all kinds of braces and shoes. Braces and shoes applied by myself gave only moderate relief. Achillotomy advised and done January, 1911. A plaster cast was used for six weeks. Following the removal of the cast there was considerable swelling of the feet for some time, so that the patient became very much worried about it. Properly graded exercises were begun and proper shoes and mechanical supports were adjusted. Two years later, the patient can walk as far as she wants to and has no soreness excepting a little after a hard day's work. The patient is much pleased with the result.

During the last six months I have been operating on these patients under gas anesthesia, thereby eliminating the only possible danger which attended this operation before, namely, that of complications due to ether.

Dr. Schaffer describes in his article an apparatus for slowly stretching the tendo Achillis. Perhaps I should have tried this method before resorting to operative procedures. As the element of time, however, is important to most of these patients, it is my opinion that section of the tendo Achillis probably will always be the quicker method of achieving the desired result, namely, that of lengthening this tendon.

One word further as to the examination of patients: In testing for a shortened heel cord, we must be sure to have the patient's knee straight, for the obvious reason that the insertion of the gastrocnemius is above the knee-joint. With the knee bent, there is a great deal of slack, which is taken up when the knee is extended as in standing.

CONCLUSIONS

1. Shortened tendo Achillis accompanies at least 16 to 18 per cent. of all cases of beginning weak-foot.
2. There is experimental evidence at hand, easily to be reproduced, that a shortened heel cord can alter the range of motion of the foot and cause eversion to accompany continued dorsiflexion.
3. By simple division of the heel cord, we restore to the foot a certain range of normal motion, which has become lost to it, and without which normal range of motion the foot cannot properly perform its varied functions.

ABSTRACT OF DISCUSSION

Dr. Charles A. Parker, Chicago: I have not had any experience with the method of treatment mentioned by Dr. Geist, but I wish to speak with regard to the possible action and reaction after the tendo Achillis is cut. It is the only extensor of the arch of the foot behind the ankle. All the structures in the sole are flexors of the arch; and when it is cut, they have a tendency, I suppose, to produce a type of calcaneum that, of course, does not go on to complete development; but it allows the structures in the sole of the foot to develop an arch.

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[5] Bradford and Lovett: Orthopedic Surgery, p. 570.

[6] Hoffman: Conclusions Drawn from a Comparative Study of the Feet of Barefooted and Shoe-Wearing Peoples, Am. Jour. Orthop. Surg., 1905, iii, 105.

[7] Williams, A. H.: Static Foot Error in Private Practice, Am. Jour. Orthop. Surg., 1910, vii, 481.

[8] Abbott and Pingree: Restoration of Normal Balance of Foot, New York Med. Jour., 1908, lxxxvii, 875.

Dr. Roland Meisenbach, Buffalo, N. Y.: Dr. Geist's paper is very important, from the fact that many cases of weak feet due to the tense calf muscle are overlooked. The paper recalls to my mind two cases which yielded stubbornly, one in a strong, healthy woman who had weak feet and beginning flatfoot, in which I am sure that the prime factor of discomfort was the shortening of the tendo Achillis. Temporary relief was given by stretching the calf muscles. In the other case I tried every means to relieve the condition except section of the tendo Achillis, which was refused by the patient. I think that it is much better to do the open operation in lengthening the tendon rather than to section subcutaneously, especially in adult patients with large tendons, as thereby one is less liable to produce a large callus which may delay convalescence.

Dr. Frederick C. Test, Chicago: I cannot quite agree with Dr. Geist in calling this condition a true case of weak-foot. It seems to me that weak-foot is due to relaxation of the muscles and ligaments; and that in this condition it is rigidity and shortening of the tendo Achillis, and often of the peronei tendons as well, that is the cause of the trouble. It is more a contraction than a relaxation. I have seen many patients who objected to section of the tendo Achillis, and in these cases I have obtained good results by removing the heel and thickening the sole, so as to lift the front of the foot, and then after a few weeks stretch the shortened heel tendon, thus solving the same mechanical problem along bloodless lines.

Instead of calling such a deformity "weak-foot," I call it the "high-heel hobble."

Dr. Newton M. Shaffer, New York: This question of the effect of a shortened tendo Achillis on flatfoot is, I think, one that I was the first to bring before the profession. I stated at one time that every case of flatfoot had a shortened heel-cord. I wish to reiterate that statement to-day with a slight modification. It all depends on the way the foot is examined, whether it can be demonstrated or not. The foot, as you know, is abducted in simple flatfoot—not the inflammatory kind—which is the last stage of the condition. If you take the patella as your guide and bring the tarsus immediately under the patellar line and then attempt to get flexion of the ankle-joint, dorsal flexion will stop inside a right angle. Underlying all these conditions may be lack of nutrition.

With a long tendo Achillis and tight plantars, you have a hollow foot, while with a short tendo Achillis and flabby plantars, you have a flatfoot. I have seen the conditions pass from one type to the other. A girl with a hollow foot weakened with ordinary illness will have so much strain thrown on it that the plantar fascia gradually yields and produces flatfoot. I wish therefore to reiterate what I have said before, and still believe to be the truth, that in 90 per cent. of the cases of flatfoot I can demonstrate a short tendo Achillis.

I have come to believe that division of the tendo Achillis is the best method of treating the more advanced and resistant cases.

Dr. Emil S. Geist, Minneapolis: I have not yet encountered a case of excessive callus that gave trouble; hence, since subcutaneous division has been so satisfactory up to date I shall continue with it. We are all, no doubt, familiar with the small epidemics that we see every summer, when the young ladies discard high-heeled shoes and play tennis and other athletic games that bring them down on their heels and require them to put a pull on the tendo Achillis with bad results at times.

I wish to reiterate the statement that this is only one stage. It is necessary to follow up the operation of achillotenotomy with the measures that, in the years gone by, we have already learned to appreciate, namely, proper shoes, braces and exercises.

Regarding the priority of Dr. Schaffer, I would say that the only authority that I have for not mentioning the doctor as being the first to point out the relationship of short heel-cord to weak foot, is Hoffa, who mentions in this connection the name of Krauss. I have been unable to locate the work of Krauss on this subject.

CERTIFIED MILK *

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The propaganda for clean milk has been one of the chief factors in the development of the "Social Welfare" movement during late years. In all our centers of population certified milk is an important item in the food supply of the baby and its production engages the attention of many of our best sanitarians and pediatrists.

We find that there is still prevalent in the profession, even where we would least expect it, much misconception as to what certified milk is and what benefit is to be expected from its use. Thus we often hear certified milk spoken of as if it were identical with pasteurized milk, and I have known physicians to advise against the former on the ground that to heat milk made it unfit for infant-feeding, although certified milk is, of course, not heated at all. In The Journal of the American Medical Association we find the question asked, "Is Certified Milk Safe?"[1] and the emphasis is there laid on the dangers which are inherent in all milks and against which even certified milk cannot absolutely guard. In the *American Journal of Diseases of Children* we find quoted[2] without unfavorable criticism a standard of 30,000 bacteria per cubic centimeter; while in a paper[3] read before this Section last year it is asserted that a "waste of money and effort accompanied the work of many of the charities which confined their efforts to the distribution of clean milk, of which so much was once expected, but which accomplished little more than to help to prove that impure milk plays by no means the most important part in the causation of infant mortality." What the writer of the article doubtless had in mind was the now generally recognized truth that impure milk is but one of the many factors in our tremendous infant morbidity and mortality, and that measures for the prevention of summer diarrhea and similar diseases, which are predicated only on the furnishing of clean milk for children's use, have not been so successful as at first was anticipated; but that these efforts were barren of results as affirmed by the writer of the criticism, is absurd. All agencies intended to improve the living conditions of the children of our poor take their origin from the pure milk movement, and have, as one of their most important functions, the proper feeding of the babies under their control. This means, as a primal necessity, that the milk furnished them shall be clean.

Because of lack of information on this subject among the profession at large, and because of the recent adoption by the American Association of Milk Commissions of a code of requirements which it is hoped will eliminate discrepancies in the requirements of different commissions and which will make the production of certified milk uniform throughout the country, it has seemed to the officers of the association that this was an opportune time to bring to notice the provisions of this code and to make more accurate the general conception as to what certified milk is.

The certified milk movement originated with Dr. Henry L. Coit,[4] who, after several years' ineffectual effort to improve the milk supply of his community through legislation and other ordinary means, devised the plan for a commission consisting of medical men, which, by voluntary supervision and control of methods, by paid expert inspection of dairy work, and by their certification of the product, should undertake, in cooperation with dairymen possessing the requisite intelligence and capital, to make available a supply of milk produced under regulations imposed by themselves, which should fulfil the most exacting requirements of the physician.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Is Certified Milk Safe? Editorial, The Journal, A. M. A., April 20, 1912, p. 1200.

[2] Mosher, C. G.: Metabolism and Nutrition, Diet. and Hyg. Gaz., March, 1912; abstr., Am. Jour. Dis. Child., October, 1912, p. 256.

[3] Cooley, Thomas B.: Relation of the Infant-Welfare Movement to Pediatrics, The Journal A. M. A., Dec. 2, 1912.

[4] Dr. Coit's writings are freely quoted without definite reference.

Under the leadership of Dr. Coit, the first medical milk commission was organized in 1893, in Essex County, New Jersey. The term "certified milk" was coined to designate the milk produced under the control of this commission, and was protected by United States copyright. In addition to this, many states have since passed statutes prohibiting the use of the term except on the authority of a properly constituted commission. The movement, originally designed by its author to meet the dire necessities of his own neighborhood, was so successful that similar commissions were organized elsewhere—in New York in 1896, in Philadelphia in 1897, and since then throughout the country—until there is now a total of not less than sixty commissions in twenty-three states, and two in Canada. New York leads with ten, Ohio has six, while California in the extreme West and Massachusetts in the East each have five. The American Association of Milk Commissions was organized in 1906, to institute better methods of propaganda and to unify the work of its component commissions. In California there is also a state association which aims to keep the work within its jurisdiction on the same high plane.

The influence of these commissions has been so profound, not only within the limits of their own immediate activities, but in relation to the improvement of the general milk-supply and all other food products, that they may be classed as one of our most important agencies in public health work; and Dr. Coit, through whose continued ardent advocacy of the cause of pure milk thousands of babies have been saved from needless sickness and death, may properly be named among our great medical philanthropists.

The first step in the acquisition of a supply of certified milk in any community is the organization of a milk commission. This should consist of about five physicians, selected by the county medical society solely because of their known interest in all that the pure milk movement stands for, and perhaps a public-spirited attorney or one or two other lay members should be added to it. Their term of office should be five years, for experience in the work is essential for useful service on a commission, and the personnel should be changed as little as possible. The members receive no pay, and the expense of the work, the fees of the experts, printing, etc., are provided for by a system of assessments on the dairies certified.

An approved and trustworthy dairyman, with financial ability and adequate dairy facilities must then be found, who will agree, in consideration of medical support and an increased recompense in the price of his product, to conduct his dairy, collect and handle the milk in conformity with the requirements of the commission.

Formerly, each commission fixed its own requirements and naturally there resulted a great variety of standards. The code of the American Association was adopted last year only after the most painstaking consideration of its provisions by a committee of able and experienced members, and it may be held to represent the most authoritative conception of the conditions under which milk should be produced for certification. Membership in the association will hereafter depend on acceptance of and compliance with this code, and it is hoped that the heretofore heterogeneous standards of the various commissions will soon be obsolete.

The duties of the members of the commission shall be to enforce the regulations, which, in the code referred to, cover in minute detail every phase in the production of certified milk; to be responsible for personal inspection of the dairy and distributing stations at such intervals as will serve to keep them thoroughly in touch with the management; to provide for competent expert examination of the herd by approved veterinarians, and bacteriologic and chemical analyses of the milk at proper intervals; to maintain such supervision over all matters pertaining to the health of employees as will protect the milk against contamination by pathogenic organisms from those engaged in handling it; and to advance the doctrine of pure milk by private precept, by public lectures, exhibits, literature and all other available means.

The control of the commission over the dairy and the entire process of production and distribution of the milk must be absolute. The hygiene of the dairy is the first consideration. The terrain of the farm must be such that it is well drained and the paddocks and yards shall be kept clean and dry. Rubbish and stable dirt shall not be allowed to accumulate nor shall any insanitary condition be permitted. The water-supply must be pure and ample.

The dairy buildings must be located at a sufficient distance from other buildings, toilets or latrines. dusty roads, cultivated and dusty fields, or other possible sources of contamination. If unavoidably exposed to dust the buildings must be screened with cheese cloth.

The stables must be so constructed as to facilitate the prompt and easy removal of waste products. The floors must be made of non-absorbent material, must be properly graded and drained and have cement gutters at least six inches deep to catch and carry off all manure and drainage. The walls and ceilings should be planned to avoid lodgment of dust and dirt. At least six hundred cubic feet of airspace should be allowed for each cow, with not less than four square feet of window area. The buildings must be screened to prevent the entrance of flies, rats, and other vermin. The greatest cleanliness must be maintained about the premises at all times, the stables are to be washed out twice daily, and all feed and water-troughs kept clean and sanitary.

The proper selection of cows for a certified herd is a matter of importance, a proper admixture of animals of different breeds being frequently necessary to maintain the requisite fat standard. The productivity of each cow in a herd should be recorded and the unprofitable ones weeded out, as a few such in a herd lower its average output very appreciably and entail financial loss to the owner. No cow should be admitted to a certified herd until its freedom from tuberculosis or other disease has been determined by the veterinary expert of the commission, and the entire herd must be subjected semi-annually to a rigid tuberculin test, which shall conform to the rules and regulations of the United States government with respect to tuberculin testing.[5] Veterinary supervision must be maintained at all times and sick cows at once removed from the herd and quarantined or destroyed as the nature of the illness may require. In California there is what should be regarded as a valuable rule in relation to the exclusion of tuberculosis from the herds, namely, when a group of animals from one source is examined for admission to the herd, if more than 10 per cent. react to tuberculin, the entire group is rejected. We do not believe it safe to admit to a certified dairy even non-reactors from herds known to be extensively infected, as this will almost surely permit animals in the incipient stage of the disease to gain entrance. Each animal is identified by a numbered ear-tag or other mark, and a descriptive record is kept of distinctive markings, dates, results of tuberculin tests, etc.

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[5] Circular of instructions for making tuberculin tests, U. S. Bureau of Animal Industry.

Cows should be kept clipped and before each milking must be thoroughly cleansed by brushing and washing, the udders especially being washed clean and dried. All utensils used in handling the milk must be sterilized, and the milkers must wear clean washable suits and carefully cleanse their hands before milking. One of our Western dairies under probationary certification during the past year, has been using milking-machines with which great difficulty was at first encountered in keeping down the bacterial counts, but this is apparently being obviated by experience and minute attention to detail.[6]

The milk must be strained, cooled and bottled immediately after being drawn and the bottles sealed with a cap bearing the name of the dairy and of the certifying commission, together with the date of production or of permissible delivery. The bottles must then be packed in ice in suitable containers for shipment and must reach the consumer within thirty hours, the temperature at the time of delivery not to exceed 50 F.

Chemical and bacteriologic examinations of the milk are to be made at least weekly, and in the event of any deviation from normal standards, tests shall be made daily until the discrepancy has been corrected. If this cannot be accomplished within ten days, certification shall be withdrawn. So delicately balanced may be the organization of a certified dairy and its success so dependent on perfection of technic, that I have known the sudden loss of a cleaner to be at once discovered by the bacteriologist, the added work thrown on the remaining hands and the slight relaxation in methods having resulted in an immediate rise in bacterial content.

The methods that must be followed in carrying out the chemical investigations essential to the protection of certified milk are so complicated that, in order to keep the fees of the chemist within moderate limits, those procedures must be eliminated which are not strictly necessary to demonstrate the quality of the milk. For this reason the determination of the water, the total solids and the milk-sugar is not required as a part of the routine examination by the code of the American Association.

The fat standard is fixed at 4 per cent., with a permissible range of variation of from 3.5 to 4.5 per cent., while the standard for certified cream is 18 per cent., with an allowed variation of 2 per cent. in either direction. The tests recommended are the Babcock, the Leffmann-Beam, and the Gerber.

The protein standard is fixed at 3.5 per cent., with a permissible range of from 3 to 4 per cent., to be determined by the Kjeldahl method, the Gunning or other reliable modification being used, and the factor 6.25 being employed in reckoning the protein from the nitrogen. The protein determination may be omitted except when some special condition renders it desirable.

The chemical examination also includes tests for adding coloring matter and preservatives, among the latter being formaldehyd, borax, boric, salicylic and benzoic acids, and salts of the latter; and tests to determine if the milk has been heated. The specific gravity should be between 1.029 and 1.034.

The bacteriologic standard of the American Association is not to exceed 10,000 bacteria per cubic centimeter of milk, and the presence of pathogenic bacteria excludes the milk from certification. The samples to be examined must be collected by a representative of the commission, in original packages as offered for sale and they must be kept iced until plated, which shall be not later than forty hours from time of milking. Because of the great variation in methods for the bacteriologic examination of milk and the divergent results thereof, the methods to be followed in the examination of certified milk, the composition of the culture mediums, the technic of plating and the period of incubation are all carefully specified, thus affording a proper basis of comparison between milks from different sources. The experts of the commission are required to render written reports of each examination made by them, these to be kept on file in the office of the secretary.

The milk laboratory is a development of the pure milk industry which now, in a number of our cities and in connection with certified dairies, affords the physician an opportunity to order for his little patients milk formulas much more accurately compounded than is possible by home modification, which is a very great advantage in infant-feeding.

The conditions under which certified milk is produced make it impossible that it shall ever constitute a large part of the total milk-supply. As long as we continue to use milk in its natural state, however, we may feel sure that no higher grade of milk can be obtained and that certification will continue to exert an ever-increasing good influence. The one disadvantage urged against it is that of its higher cost in comparison with ordinary milk. This is apparently a valid objection, but it may be stated that in no other combination of foods obtainable in the markets can the same food value be obtained for the price which certified milk commands. The objection, therefore, is more apparent than real.

Chief among its advantages are its known and constant chemical composition and nutritive value; its relative freedom from bacteria of any sort and its practically absolute freedom from pathogenic organisms; its early delivery to the consumer in sealed and iced containers; its purity and freedom from adulteration; and its consequent adaptability to the dietetic requirements of children and invalids.

That these qualities are assured by the guarantee of physicians actuated solely by philanthropic motives in their milk commission activities, merits for certified milk the confidence of the profession and the public. We feel, therefore, that we may expect the unqualified support, especially of pediatrists, and of all those who are interested in the public health.

ABSTRACT OF DISCUSSION

DR. J. W. VAN DERSLICE, Chicago: I am not a Holstein man, I am a Brown-Swiss man. In the pure-bred Holstein it is practically impossible to run a uniform fat percentage. There is no animal in which atmospheric changes, fright, etc., affect the contents of the milk so much as in the Holstein. Last fall we had a severe thunder-storm; the following day the fat of the Holstein farms dropped to 2.6 per cent. The thunder-storm did not last over fifteen minutes.

Another thing to be considered is the milk-machines. We had one farm with milk-machines and we did not have any trouble with the bacteria count. After we had educated the milkmen to the certified-milk plan they turned out milk of very low bacterial count. We did find that veterinary examination of that herd was important. It was necessary to examine the herd weekly, and practically every time it was necessary to throw out one or more animals on account of mastitis. So the milk-machine was discredited. I hope that next year I can tell you that the milk-machine is the only thing to use. One of the other farms is putting in milk-machines, and we hope that improvements have been made in this machine so that it will not develop mastitis. If we could get machines that would not cause disorder of the udders, the question of the production of sanitary milk would be answered.

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[6] Since writing this paper, certification of this dairy has been canceled.

Dr. Henry L. Coit, Newark, N. J.: In connection with the initial steps made to secure certified milk, I wish to say that unaided I could never have accomplished it. Without the cooperation of the producer my work in the beginning would have been negatived. Had it not been for the loyal cooperation of physicians my plans would have failed. The name of the dairyman who produced the first quart of certified milk should be recorded in history. It is Stephen Francisco. Without the practical dairyman, the medical milk commission could accomplish little.

Had it not been for the loyal support of the representative medical milk commissions this association would not have been founded. Geier, Freeman, Hamill, Tuley and Myers gave the impetus in founding this movement. I wish simply to supplement the kindly reference to me by mentioning the names of others who did constructive work.

Dr. John Zahorsky, St. Louis: In St. Louis we have met great difficulty in keeping the bacteria count down to 10,000 because of the hot weather. Generally we have it down even below this, but in spite of the same care it will run up. The commission has insisted on uniform standards. I still think that there will have to be some variation in standard in order to meet climatic conditions. So far as the effect on the infant is concerned, it does not matter whether the bacteria count is 10,000 or 30,000. There will have to be a minimum and a maximum count, and not a definite fixed line.

Dr. Thomas C. McCleave, Berkeley, Cal.: I do not believe that a dairy which produces milk only under 30,000 has any right to ask for certification by milk commission in any part of this country. The work of North in New York state is probably familiar to you all. We know that he teaches that, under almost any conditions of environment, almost any intelligent dairyman can produce milk of a lower bacterial count than 10,000. In my cities the ordinary market milk is crowding certified milk very closely in the matter of bacteria count, and for us to have on the market in any city a certified milk in which we insist that this count come down to only 30,000 would be most mortifying, when you consider that in that city ordinary market grades of milk may be found to have lower bacterial counts than certified milk. Any dairyman who is not willing to produce his milk under conditions which will guarantee an average of 10,000 or less should not produce certified milk. We have no difficulty in keeping the count below 10,000. Our dairymen themselves would be mortified if we suggested that they come down only to 30,000. The matter of uniformity of standards is, of course, a debatable question. The object of the American Association of Milk Commissions, as I understand it, is to assure to physicians who are not members of the association of milk commissions and the public that when they ask for certified milk in New York or Brooklyn, or Chicago, or San Francisco, or anywhere they know what they are getting. The bacterial count, the care of cows for protection against tuberculosis and all the requirements should be the same. It is even true in this country that there are commissions putting the stamp of guarantee on milk from cows which have not been tested for tuberculosis. The whole propaganda of the milk commissions is discredited by one commission of this kind. We do not expect that every commission will be able to come up to our standards absolutely. In various parts of the country climatic or other conditions may make it impossible to do this; but all we ask is that the commission come up to the standard to the best of its ability. If we have an honest commission the result will be fairly good. When commissions are willing to give their names to something concerning which they know nothing, then we have a product which is misbranded and should come under the ban of the pure food laws. Some members of commissions do not know what certified milk is. That is the reason I wrote this paper—there is so much ignorance as to what certified milk is. In some parts of the country the laity are much better informed along this line than the physicians.

Mr. Stephen Francisco, Fairfield, N. J.: Our plant does not produce certified milk only. The idea is to make certified milk safe for infant feeding, and I pity the producer who does not consider infant feeding above everything else. It takes more than the cattle there to produce the milk desired. The herd has to be examined every day. There is hardly a day that some cow is not taken from our herd for one reason or another, generally not to return. We are learning something every day, through the suggestions of our physicians, bacteriologists, chemists and veterinarians—every one of whom is giving thought to this matter. Certified milk costs between 12 and 13 cents a quart.

Mr. W. E. Miller, Lebanon, Ohio: The cost of certified milk may be estimated in percentages as follows: Wages, 28.26; supplies, 2.40; stable hauling, .31; power and refrigerations, .58; repairs, 1.31; freight, 5.46; feed, 47.23; cost of certification, 8.42; miscellaneous, 4.79; bedding, 1.24.

I have taken the cost of milk from our books for 1912. This covers one year, and I have taken the total cost of all the items that should enter into the problem and have reduced them to percentages.

There is no uniform system of accounting among the producers of certified milk. Each man must take into account local conditions. It is rather hard to compare the results of two men. Perhaps this can be worked out in the near future. If we can arrive at a uniform way of accounting it will help to clear up the cost of production. We know that in some places the production of certified milk is a fad. Men with more money than they need select this method to get rid of it. It seems to me that philanthropy and business do not mix well. If this movement for the production of certified milk is to succeed, it must be put on a sound economic basis. We do not advance far in any business unless the firm profits, and these profits should include a proper compensation for everyone concerned. I have heard of certified milk selling for from 12 to 20 cents a quart. If the milk is the same all over the United States as it should be, then why this difference in price? Some men say that they cannot afford to sell certified milk for 12 or 16 cents. Perhaps there is something in their organization that needs improvement. We should first be sure that we have approximated 100 per cent. efficiency and then, if the price of certified milk is not sufficient to give a fair compensation, it is time to ask for an increase in price. All fair-minded producers are trying to reduce the cost as much as possible. We have organized our force into three divisions—a cleaning division, a feeding division and a milking division, in order to get 100 per cent. efficiency.

The cost of certification, including the cap as well as the inspection, is 8.42 per cent. I think that the consumer should not be burdened with the unnecessary cost of supervision and capping. We should try to secure trustworthy men, so that the milk need not be kept under lock and key. We must, of course, protect the public as much as possible. After the public is protected our supervision should stop.

Another thing that increases the cost of certified milk is the appearance. We have to take into account the psychology of the situation. Things have to look clean as well as be clean. Can anybody tell me in what respect a white suit is any cleaner than a blue suit or a black suit? It simply looks cleaner. If we are to spread this gospel of certified milk among the consumers, among physicians, we must appeal to the eye. The bacteria count may be good, but the people cannot see the germs; they can see the color of the suit, which may have nothing whatever to do with the bacteria count. That is one thing that keeps up the cost of production. The thing that appeals to me is the advantage of bringing certified milk within the reach of the greatest possible number.

These cost items do not include distribution. The milk is in Cincinnati, the freight is paid, but the milk has not yet been distributed to the consumer. This certified milk is distributed with the other milk. It is, therefore, impossible for us to distinguish the cost of distributing certified from other products. If we had nothing but certified milk it would be easier.

DR. OTTO GEIER, Cincinnati: Will you analyze the cost of certification?

MR. MILLER: It includes cap and inspection by the veterinarian, inspection by the bacteriologist and chemist and all charges of that nature.

DR. J. W. VAN DERSLICE, Chicago: What is the price per pint?

MR. MILLER: Four and three-quarters cents. Wages and repairs and freight are all higher on certified milk than they are on common milk, and feed also is higher.

DR. T. C. MCCLEAVE, Berkeley, Cal.: Mr. Miller has not answered the question adequately. A large part of the cost of certified milk, as compared with ordinary milk, is dependent on the addition of the actual expense of certification. It depends also on the greatly increased running expenses of the dairy. For instance, the matter of putting in steam sterilizing plants and sterilizing every utensil that is used, requiring men to wear clean suits, which have to be provided and laundered. The cost of tuberculin testing and the cost of the animals destroyed when found to be tuberculous are large items. All those items enter into the question over and above what Mr. Miller specified. If a dairyman started to produce an equal grade with certified milk, irrespective of any relation to the commission, his expenses leaving out fees, would be higher than those of the man who produces in the ordinary way.

DR. J. W. VAN DERSLICE, Chicago: In Chicago the milk is produced practically under two contracts. Under one the man furnishes the bottle, label and certification and sends the milk f. o. b. to Chicago for 12 cents. The distributor orders a certain number of bottles each day. The other contract, which brings the cost of certification and the cost of distribution more clearly before you, is, I believe, the best one. There are four or five firms under contract to distributors, who agree to take the entire output of the firm at 8 cents a quart net, the distributor furnishing the labels, paying the cost of certification and buying the bottles. On that 8-cent basis, the farmer—and the farmer I am speaking of knows how to figure costs—says he is getting $2 a hundred for common milk. In other words, he says the difference between the production of certified milk and the production of commercial milk is that, if he sells his milk as a commercial milk, with the lessened cost which that entails, he would sell it on a graduated scale running from $1 to $1.70 per hundred. For the year 1911 the average was $1.67. For the year 1912 it was a little higher. This man says that he is selling his commercial milk for $2 a hundred. In other words, the men who figure the cost for us most closely tell us that there is a leeway of 40 cents per hundred pounds, or 40 cents per 46 quarts, between the production of certified and commercial milk. This philanthropy then is a fine text for a sermon. They do not talk that to me any more. The men who went into this business first have their money tied up in a big plant. They knew nothing about what the possibilities were for them, but the man who goes into the business to-day does so as a money-making proposition, because there is a market for the product. The rich man wants some place to take his fine friends, and the only possible way to make the farm pay is by the sale of certified milk. There is absolutely no question about it. The big farm to-day that is not selling its entire output is losing money. According to the government reports, over 50 per cent. of the farms are losing money to the owner every day.

Another point I wish to bring out is the value of the superintendent. We can show you superintendents who have changed from one farm to another, and the bacteria count follows the superintendent. You must have a man who knows, feels and breathes certified milk. Another point Mr. Francisco spoke of—in one-half or two-thirds of our farms a prize is held up to the employees on the farm—a bonus of $5 a month if the bacteria count during the month is under 5,000. In that way you have every worker on the farm watching his coworker to see that there is no carelessness. Every man wants that $5.

DR. OTTO P. GEIER, Cincinnati: There is nothing about which there is so much confusion as the cost of certification. I attempted several years ago to make a survey of the methods used by the different commissions of the country and to define in my own mind, at least, the broad problem of the cost of certification. There are just as many methods of arriving at the cost of certification as there are milk commissions in the country. One commission charges a per bottle tax and supplies nothing but the chemical and bacterial work and veterinary inspections. The next one charges a flat rate for each bacteriologic chemical and veterinary examination, and the producer buys his caps. In still another instance the producer pays a per bottle tax and the chemical, bacteriologic and veterinary inspections are made by the commission. The commission also buys the caps and seals out of the per bottle tax income. So you have just as many variations in the matter of arriving at the cost of certification as you have commissions. I have not seen the figures shown here before. At first sight they seem unreasonably high. I should remark, however, in the interest of Cincinnati that the commission does many things for the producer. It supplies the caps and seals, medical inspections, veterinary inspections and chemical and bacteriologic examination, which are done biweekly, and more frequently if there is any trouble at the dairy. The commission is able to maintain a laboratory for this work in connection with the office of the commission. The bacteriologist and chemist and his assistant, as well as the medical profession of the community, are at the call of the dairymen. The commission also does propaganda work, thus advertising the product of the dairymen and in a general way serving the community from a broader point of view. Everything else being equal, it is fairer to use a per bottle tax than a tax which applies only to the various examinations. In a per bottle tax the large producer helps pay the load of the smaller producer.

MR. W. E. MILLER, Lebanon, Ohio: The cost of keeping up the herd is based on the assumption that the herd is practically stationary. Individuals go out, but others come in. We have practically no loss from the tuberculin test. As a matter of fact, the herd increased in value during the time under discussion. As to repairs, our aim is to keep the equipment in the original condition. It is practically as valuable now, because of improvements made from time to time, as it was in the beginning.

PATHOLOGY OF THE PROSTATE *

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Sixty-eight years ago Samuel D. Gross[1] stated that the prostate gland consists of "two lateral lobes and a small pyramidal tubercle, which is a small portion of the gland in a state of hypertrophy, described as a third lobe by Sir Edward Home."

In Keen's edition of "Gray's Anatomy" published in 1887 I find that the prostate has "two lateral lobes of equal size separated by a notch. A third or middle lobe is a small transverse band, occasionally a rounded or triangular prominence placed between the two lateral lobes.

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Gross, Samuel D.: Elements of Pathologic Anatomy, Boston, 1845.

According to Gerrish[2] the prostate consists of two lateral lobes.

In Cunningham's "Anatomy," 1903, we find the following statement:

> The somewhat wedge-shaped portion of the prostate, which lies between the ejaculatory ducts and the posterior aspect of the urethra receives the name of the *middle lobe*. . . . The rest of the prostate is described as being composed of two large lateral portions or *lateral lobes*."

White and Morton, 1907, say that "the prostate is made up of two lateral lobes connected by an isthmus."

Many more authors of comparatively recent date could be quoted, using about the same language in each case, namely, that the prostate is made up of two, or at most three, lobes, with no definite or comprehensive description of their relations. Notwithstanding the fact that much good research work has been done on this subject by several investigators, it seems to have encountered the same difficulty of most new subject-matter in penetrating the covers of the average text-book. It is kept from their pages because there is no room remaining after the stereotyped matter that has been handed from generation to generation is given its accustomed place of prominence.

Among those who have developed the embryology, histology, anatomy and pathology of the prostate so that now we have a definite knowledge of this subject that can be accepted are Young, Geraghty and Stevens, 1906, von Frisch, 1910, Tandler and Zuckerkandl, 1911, and Lowsley, 1912.

While many others have studied this subject in detail and have published excellent monographs, it seems to me that these four reports which have appeared in the last seven years cover about all that is of value pertaining to these phases of the prostate gland. When some one works out a definite etiology of prostatic hypertrophy the last chapter on the prostate gland will have been written.

In view of the fact that most of the data on this subject are of recent date it seemed advisable to present at this time a summing up in concise form a sort of working knowledge and to further stimulate a more general interest in this important region of the body.

That there may be no confusion as to terminology it seems advisable that a definite understanding be had regarding the various portions of the gland. According to Lowsley these are as follows:

> The middle lobe, or that part of the gland which is situated between the bladder and the ejaculatory ducts under the floor of the urethra (prespermatic and posturethral). Lateral lobes or those parts of the gland which arise from the prostate furrows and the lateral walls of the urethra and extend laterally and posteriorly from that structure. Posterior lobe, or that part of the prostate which lies dorsal to the ejaculatory ducts above their entrance into the urethra and dorsal to the urethra below this point (postspermatic and posturethral). This is the part of the prostate which is felt per rectum. Ventral lobe, or that part of the organ formed by glands arising from the anterior or ventral wall of the prostatic urethra.

EMBRYOLOGY

Lowsley's investigations of the development of the prostate gland consisted in serial sections of prostates and surrounding tissues obtained from human fetuses varying in age from 10 weeks to full term. He found that the prostate gland begins to develop during the third month of fetal life.

> The tubules which compose it make their appearance as solid epithelial outgrowths from five distinct parts of the prostatic urethra. These solid masses of deeply staining cells very soon become circularly arranged around the lumen, and branches are found very early. The five foci from which groups of prostatic tubules take their origin are located as follows: on the floor of the urethra between the neck of the bladder and the openings of the ejaculatory ducts and utriculus prostaticus, one in each prostatic furrow and on the sides of the urethra, on the floor of the urethra below the openings of the ejaculatory ducts and the utricle, and on the ventral or anterior wall of the prostatic urethra. The tubules originating from these five foci by their further growth and the development of the stroma around them become the middle, right and left lateral, posterior and anterior lobes, respectively. In early fetal life they are widely separated from one another, but in later stages the separation between the middle and two lateral lobes is not very great. There is not an intermingling of tubules in any of the specimens studied, but in many places in the new-born the tubules of the middle lobe are observed side by side with those of the lateral lobes, there being no definite capsule separating them. The separation of the posterior lobe from the others is complete, as there is a rather dense layer of fibrous tissue between it and the lateral lobes. The anterior lobe is widely separated from the two lateral lobes.

There is but little difficulty in demonstrating these five lobes in post-mortem specimens, or in the prostates removed entire, during life.

HISTOLOGIC ANATOMY

The prostate reaches its full normal development about the twentieth year. The capsule or external portion is not a true capsule in the sense that it can be easily separated from the gland, but it is made up of musculoconnective tissue from which bands extend into the body of the gland surrounding the alveoli of the glandular structure. The various lobes normally have no distinct capsular separation from each other. The gland tissue communicates through numerous duct openings with the posterior urethra. It is through these openings and along the tubules that infection easily finds its way into the prostate gland from the urethra.

The prostate is in close relation with the bladder, it surrounds the urethra, is attached to the pubic arch and is very narrowly separated from the rectum. A dense plexus of veins partially envelops it.

PATHOLOGY

The most frequent cause of prostatic disturbances is the gonococcus which invades the glandular structure from a posterior urethritis. The prostatitis thus produced may be simple and confined to small areas or it may be quite general involving a large portion of the gland. There may be only an acute inflammatory condition produced or there may be abscess formation. In the latter the abscess or abscesses at times develop very early, as soon as three weeks, following the infection of the posterior urethra. It occasionally happens that about the time the abscess on one side of the prostate has been cared for there develops another on the other side.

Many cases of gonococcic infection of the prostate cause but few symptoms, yet the gonococci are resting quietly to be aroused from their lethargy following a period of dissipation and excesses by the one harboring them. Or possibly he has been contemplating matrimony and has been on his good behavior, indulging in neither alcohol nor sexual gratification for months; yet shortly after marriage a urethral discharge develops, and too often an innocent wife becomes infected from a well-meaning but still infectious husband.

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[2] Gerrish, Frederic H.: In Text-Book of Anatomy, Philadelphia, 1899.

The prostate must not be held responsible for all such late infections, however, for the seminal vesicles are more frequently infected than was formerly supposed. Owing to the close relation between the prostate and seminal vesicles it is very difficult to state when one is involved and not the other. In many post-mortem specimens examined I have found a perivesiculitis so pronounced that it was no easy matter to determine by touch where the prostate ended and the vesicles began. I am convinced that we have often made the mistake of diagnosing prostatitis when in fact it was seminal vesiculitis. That it is possible for the vesicles to be pathologic with a normal prostate has been proved several times in the post-mortem specimens examined. Most of my material was gathered from the Cincinnati City Hospital, and normal seminal vesicles were rare.

Tuberculosis of the prostate may be primary, but is in most cases secondary to tuberculosis elsewhere in the body, and is usually secondary to tuberculosis elsewhere in the genito-urinary tract. Most frequently tuberculosis of the kidneys or epididymes precede invasion of the prostate. Among the cases that I have been able to examine post mortem there has been found only one of tuberculosis involvement of the prostate in which the seminal vesicles have escaped the same infection. Often it is the seminal vesicle and that side of the prostate corresponding to the epididymis, right or left, that is involved. Since tuberculosis of the prostate is seldom if ever the primary focus of urogenital tuberculosis and is almost always associated with tuberculosis of the seminal vesicle, the futility of surgical treatment can readily be understood. In these cases it is also frequently difficult to locate on rectal examination the upper border of the side of the prostate involved, as it is coalesced with the seminal vesicle by new inflammatory tissue.

Calcareous deposits are not infrequently found in the prostate in late adult life. This may be in the form of small accumulations of calcareous material disseminated through the gland, or a single large calculus, or a pocket containing many hundred small calculi.

SENILE CHANGES

Many men past 50 years of age have urinary disturbances. The large majority of these are due to pathologic changes in the prostate gland. Nevertheless it must not be taken for granted that because a man is more than 50 and has urinary trouble, that it is necessarily due to the prostate. Recently a man aged 62, who had been treated for hypertrophy of the prostate for some time, was referred to me for operation. His troubles were all due to a very tight stricture in the bulbous portion of the urethra which had developed subsequent to a gonorrheal urethritis contracted more than twenty years previously.

Senile changes from the normal morphology of the prostate are three: (1) adenoma, new growths in the glandular stricture; (2) increase in the relative amount of stroma, fibrosis, and (3) malignancy.

Any one or all three may be present in a single case. In the very large prostates there is an enormous development of adenomatous tissue with practically no increase in amount of the stroma or musculoconnective tissue. This variety can easily be felt per rectum and is not hard.

When the interglandular tissue, the stroma, is unduly increased in amount the obstruction is not so large and feels hard.

Of the five lobes all may undergo these morphologic changes classified as hypertrophy, except that portion below the ejaculatory ducts, the posterior lobe. The most frequent origin of adenomatous growth is in the middle lobe, just beneath and behind the internal urethral opening. The anterior group of glands or lobe is seldom involved in this process, the lateral lobes rather frequently. Tandler and Zuckerkandl in their study of many post-mortem specimens of prostatic hypertrophy always found the middle lobe involved. While I am not in a position to say that enlargement of the lateral lobes are not always attended by morphologic changes of the middle lobe, I do know that many patients have been clinically cured on removal of later enlargements when no middle lobe could be felt. There is an endless variety of shapes and contours of these new growths, and their effect on the posterior urethra and the internal urethral orifice is varied. That portion of the urethra between the collicle (verumontanum) and the bladder is elongated and distorted in many ways, being flattened, twisted and pushed to one side or the other of the middle lobe.

The gland, which normally is entirely extravesicular, becomes both extravesicular and intravesicular, the enlargement pushing up into the bladder around the vesicle orifice. The sphincter vesicae is crowded from its normal position about the internal meatus and is found surrounding the intravesical portion of the new growth. In its normal state this gland can be felt per rectum, but in no way intrudes on the rectal lumen. Many hypertrophies become so large that they act as a decided rectal obstruction.

A few of our specimens show a distribution of adenomatous growths entirely around the urethra, involving the anterior, two lateral and middle lobes. These are the rings or urethral collars that are very troublesome to the patient and are difficult of removal.

The so-called "prostatic bar" is either not prostatic or not a bar. In the first instance it is a fibrous bar which has developed about the internal sphincter as a result of chronic inflammation in the posterior urethra and occurs earlier in life than true prostatic changes. In the second instance if the obstruction is of prostatic origin it is not in the form of a bar, but is an enlargement of the middle lobe, and changes the shape of the internal meatus from a normal funnel appearance to that of an inverted crescent.

As was mentioned earlier in this paper there is no true normal prostatic capsule from which the prostate can be removed. The surgical capsule which surrounds the adenomatous growths is the prostate crowded to the side during the development of the adenomata. This when examined microscopically shows both stroma and gland tissue closely compressed. Squiers has called our attention to the ease with which the line of cleavage or separation between the surgical capsule and the new growth can be found, when we seek for it in the roof or anterior portion of the prostatic urethra. In the large majority of cases there is nothing but mucous membrane covering the new growth at this place. There are some cases in which this is not true, and these are difficult of removal.

Not infrequently a patient with marked prostatic symptoms, whose prostate feels very large, is relieved of his trouble and the gland noticeably reduced in size after a few days' rest in bed, free catharsis and continuous bladder drainage. The symptoms were due to an acute engorgement or stasis in the prostatic venous plexuses, and when the predisposing causes of this were removed the symptoms disappeared. If allowed to go without surgical interference, as he should be, the patient may live comfortably for a long time without further trouble.

I am not yet convinced that a simple prostatic hypertrophy has any tendency to undergo a malignant degeneration; hence cancer is not to be feared as a later development of hypertrophy. If the patient has cancer of the prostate his trouble began as a malignancy and did not become such after he had suffered many years from an adenomatous overgrowth.

The posterior lobe is the locus of origin of practically all of the malignancies of the prostate, which are simple carcinoma, adenocarcinoma or sarcoma, the latter exceedingly rare. It is possible for the same patient to harbor both hypertrophy and cancer, since these two pathologic processes attack different parts of the gland.

Cancer originating in the posterior lobe soon obliterates the natural groove or furrow felt in the prostate per rectum. The disease may be confined to the gland or invade the surrounding structures. In one case of far-advanced carcinoma of the prostate I found, when doing a palliative operation, a degeneration or breaking down of the periphery of the cancer, and a solid mass of cancerous tissue was removed without dissection, decapsulation or cutting, as it was retained in this space much as a foreign body.

CONCLUSIONS

1. The prostate gland has five distinct glandular areas, which may be termed lobes.
2. Pathologic changes in the seminal vesicles are often overlooked and the prostate alone considered, when in fact both are involved.
3. Tuberculosis of the prostate is seldom found without the same infection of seminal vesicles.
4. Prostatic hypertrophy is usually a simple adenomatous growth which crowds the normal prostate, so as to form a surgical capsule. In the roof or anterior portion of the prostatic urethra these new growths are covered with but little more than mucous membrane.
5. Malignancy of prostate is confined to the posterior lobe.

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ABSTRACT OF DISCUSSION

DR. JOHN T. GERAGHTY, Baltimore: Our ideas regarding the pathology of hypertrophy of the prostate have changed considerably in recent years. At first, it was considered that the adenomatous process involved the whole prostate, but now it is quite generally conceded that the entire gland is not involved in the pathologic process. Albarran and Motz some years ago concluded from their studies that only the central portion or the central group of glands was the seat of hypertrophy. More recently, Tandler and Zuckerkandl brought forward the view that hypertrophy involved only the middle lobe, and this view seems to be accepted almost universally. At present the prostate at birth and in the adult is composed of (1) a posterior lobe which forms the largest part of the prostate, as felt by rectum; (2) the two lateral lobes which are fused beneath the urethra with the embryologic middle-lobe tubules; (3) the anterior lobe which in the adult prostate is usually insignificant and contains only a few scattered glands, and (4) groups of accessory glands, one group lying beneath the mucous membrane at the vesicle orifice inside the sphincter and usually referred to as Albarran's glands. Another group of glands described by Home is occasionally found beneath the mucous membrane of the trigon. This latter group is much more inconstant than the Albarran group. From my studies of prostatic hypertrophy, I am forced to disagree with Tandler and Zuckerkandl that hypertrophy originates only in the middle lobe and that the lateral masses take no part in the process. In an examination of cases of very early hypertrophy, it is possible to demonstrate the presence of the adenomatous nodules in the lateral lobes, when none are present in the portion corresponding to the median lobe. The median and lateral lobes are, as a rule, equally involved in the pathologic process, while the posterior lobe is the only part of the prostate which does not take part in the hypertrophy. As I have previously pointed out, this posterior lobe plays an important rôle in cancer of the prostate. When carcinoma arises in a prostate previously the seat of a benign hypertrophy, it does not result from the degeneration of the benign adenomatous tissue, but begins in the posterior lobe, which is the non-hypertrophied portion. The recognition of this fact is important in both the diagnosis and radical treatment of cancer of the prostate.

DR. BRANSFORD LEWIS, St. Louis: Ten years ago I called attention to the wide variations that occur in these obstructions in connection with hypertrophied prostates and their bearing on the choice between suprapubic and perineal prostatectomy. At that time I argued that there were some cases that demanded suprapubic prostatectomy, others that demanded a perineal operation and others that demanded no operation. It depended on the types that Dr. Smith has so graphically described. Later studies have, I think, confirmed that position, and I still believe that it is the proper one to take in relation to the choice of operation.

CHRONIC CYSTITIS IN WOMEN NOT A DISEASE *

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The demonstration to this section of the thesis that persistent cystitis in women is in itself not a disease, but is the result of pathologic conditions outside the bladder, strongly resembles the importation of coal into Newcastle. That this conception of cystitis is not generally held by medical men, however, has been illustrated many times in the women's room in the genito-urinary outpatient department of the Massachusetts General Hospital. A number of cases diagnosed as "cystitis" and accompanied by a too long-deferred request that they be studied have been sent there, not only by outside practitioners, but in some instances by other departments. With practically every one of these patients, the time spent in useless bladder lavage had been wasted, and in some the delay had been even more injurious because of the headway which it had afforded the disease.

Every urologist knows that the normal bladder is extremely resistant to infection. Only when its mechanics or its circulation are disturbed, or when it is continuously flooded by infected urine from the kidneys, does it succumb to bacterial invasion.

Proof of the resistance of the bladder to infection may be found in the rarity with which cystitis follows catheterization or even cystoscopy of the normal bladder. Williams, Murray and Wallace[1] found colon bacilli in the urine of twenty-four women in twenty-six, after

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* From the Genito-Urinary Service of the Massachusetts General Hospital.

* Because of lack of space, this article is abbreviated in THE JOURNAL by omission of the case-reports. The complete article appears in the Transactions of the Section and in the author's reprints.

[1] Williams, Murray and Wallace, Liverpool Med.-Chir. Jour., 1912, No. 62, p. 425.

operation, yet none of them had cystitis. Not only is the bladder resistant to new infection, but inflammation of long duration will frequently clear up with surprising rapidity, once the cause of it is removed.

It is not my contention that simple cystitis never occurs. In my series, there is one case of syphilitic cystitis. Acute trigonitis, frequently mistaken for cystitis, may follow infection by the gonococcus. Inflammation may, and usually will, result from the intense congestion caused by the too sudden emptying of an overdistended bladder. The trauma of childbirth reduces the resistance of the bladder to those bacteria which ordinarily would pass through it without effect.

It is my belief that these cases of acute cystitis will be cured by a few days in bed, urinary antiseptics and a few irrigations. When the inflammation persists, in spite of these measures, we must look for some other lesion, either in kidney or ureter, in pelvis or urethra, or in the mechanism by which the bladder should be emptied.

In order to test the soundness of this belief, I have collected the histories of ninety-eight women with cystitis. Some of these were ward cases, some outpatients at the Massachusetts General Hospital. All have been seen there within the past five years. These ninety-eight patients comprise all of the cases of cystitis found in the diagnosis catalogue for that period, whether or not occurring in conjunction with other diagnoses. There are also included a few cases of pyonephrosis in which cystitis was present, and ten cases diagnosed as urinary tuberculosis. The last-mentioned were included because the symptoms for the relief of which the patients came to the hospital were those of bladder irritability. No cases of calculus were considered.

Definite evidence of cystitis was required, thereby excluding several cases of "irritable bladder," the urine of which contained neither pus nor bacteria. The process was either seen to exist at cystoscopy, or else was indicated by the symptoms of frequent and burning urination, accompanied by pus or bacteria in the urine. Cases not showing one or the other of these requirements were rejected.

In classifying the cases according to their probable diagnosis, considerable care was observed. In many of the records the evidence was conclusive, as for example, finding the colon bacillus and pus in the urine from ureter catheterization. In others, it was only presumptive, as in a case in which a large, tender kidney, temperature of 102 and colon bacillus from the bladder urine pointed so strongly to pyelitis that there could be no reasonable doubt of the existence of that disorder. In five cases the facts were too inconclusive to admit of any definite diagnosis, and in eleven cases there were too few facts for the record to be of any value whatever.

In eight of the ninety-eight cases there was unilateral pyonephrosis. Two more patients were proved at operation to have focal necrosis. One, at necropsy, showed suppurative nephritis.

In thirty cases the diagnosis was pyelitis or pyelonephritis. In the absence of very careful study, it is impossible to differentiate between these conditions, so that I have grouped these cases together. In sixteen the diagnosis was definitely established by obtaining pus or bacteria, or both, in specimens from the ureter. In one, both ureters were dilated and both kidneys tender; in another, necropsy showed a pyelonephritis. In twelve the diagnosis was based on circumstantial evidence, such as renal pain, fever and a marked albuminuria, accompanied by painful, frequent urination, and pus and bacteria in the urine.

There were five cases of pyelitis in which the evidence pointed more or less directly to an obstruction at the ureteropelvic junction. In one the pelvic capacity was 45 c.c.; in another, 60 c.c.

One case thought to be pyonephrosis proved at operation to be an infected hypernephroma.

Considering this group of forty-one cases of renal infection as a whole, it is an interesting fact that in twenty-nine a bacillus, probably colon, alone was recovered, in two, the colon bacillus plus a diplococcus in one case, a streptococcus in the other. In one case, diplococci and streptococci were found; in another a "mixed growth." In two cases some pus was obtained, but it yielded negative cultures and negative guinea-pigs. In five, no mention of the bacteriology was made. These figures suffice to show the overwhelming predominancy of the colon bacillus in renal infection.

The route by which the kidney is infected has been the subject of much discussion. Two of the pyelitis patients had colon bacilli in the blood as well as in the urine, a phenomenon which may as well have been the result as the cause of their infection.

In five cases there is at least superficial evidence that the trouble began in the bladder and ascended to the kidneys, but here again one may argue that the cystitis was the effect rather than the cause. The fact that renal infection may occur without cystitis, but that cystitis (excluding that due to cystocele, stricture, etc.), never occurs without a renal infection, is in my opinion the most telling bit of evidence against the ascending route.

There were seventeen cases of urinary tuberculosis. In five of these the tubercle bacillus was present in ureteral specimens. In nine more tuberculous kidneys were removed. Another one, with sterile pus in the urine, exhibited a pathologic ureteral orifice. In another patient, whose bladder urine infected a guinea-pig, the right ureteral orifice was of the retracted, golf-hole type. In the third, in which the guinea-pig died too soon for diagnosis, the bladder-pus was sterile and the left ureter pathologic. Every case of tuberculosis showed evidence of renal involvement.

Two patients had cystoceles. One had a pyelitis (colon) as well. The other was cured by perineorrhaphy and a few irrigations.

Three strictures of the urethra were found. Two of these had sterile urine containing no macroscopic pus; one of them, on cystoscopy later, showed a few trigonal ulcerations. Both, however, had marked frequency and pain on urination.

There was one case of ureteral stricture, with a pyelonephritic kidney behind it and great vesical distress, and there was one tabetic bladder. The more acute stage of syphilis was represented by an ulcerative cystitis which cleared up, after obstinately resisting other forms of treatment, on mercury and potassium iodid.

Three cases of cystitis were apparently due to pelvic inflammation. In one, the bladder was adherent to the appendix; in a second, to the uterus; in a third, there was a coexistent acute salpingitis.

In five cases the diagnosis was not made with certainty. The patient in Case 84 gave good evidence of having a stricture of the ureter. In Case 85 there had been cystitis ever since a nephrectomy (cause unknown) eight years before. In Case 86 a subsiding cystitis was shown with slight evidence of a previous pyelitis. The patient in Case 87 had severe renal colic, associated with hematuria. Case 88 was apparently due to mobility of the right kidney, in which a low-grade infection had set in. This patient had a little pus in the urine, from which no bacteria could be grown. She wore a kidney belt, put on 20 pounds in weight, and all the symptoms disappeared.

Eleven cases were so insufficiently studied that no conclusion could be reached.

We have remaining, therefore, eight cases of the ninety-eight in which a simple cystitis was found. The patient in Case 76 was apparently cured by rest in bed for eight days, with hexamethylenamin (urotropin) by mouth and a daily silver nitrate lavage. Case 77 showed a red trigon with a few ulcerations. There was no bacilluria and a negative guinea-pig inoculation. This patient had a postural defect, with exaggerated knee-jerks, and it is possible that some trophic disturbance might have been the cause of her cystitis. Case 78 was insufficiently studied, inasmuch as the ureters were not catheterized, the cystoscopist relying on the appearance of the ureteral jets. Case 79 was coexistent with a gonococcus urethritis. Cases 81 and 82 were due to continued use of the catheter required by the general condition. Cases 80 and 83 were part of typhoid and paratyphoid infections.

Summary of the eighty-seven cases with diagnoses shows that cystitis was associated with:

Renal infections, not tuberculous, in	61 per cent.
Renal tuberculosis	19 per cent.
Difficulty in emptying bladder......	7 per cent.
Systemic and pelvic infections......	7 per cent.
Other causes	6 per cent.

We see, therefore, that in ninety-eight cases there is not one well-studied case of simple cystitis. Every case which was really studied showed a certain or presumptive underlying cause. It cannot be that simple chronic cystitis which is worthy of the name exists with any frequency, or it would, I am sure, have appeared within these records.

The outpatient department attracts often the most trifling ailments; it is hardly possible that it should not have drawn in a few cases, at least, of simple chronic cystitis, did that disease exist.

The answer is obvious: it does not exist. It is the duty of the urologist to drive that fact home, and to impress on medical men and the public the necessity of thorough study in every case of persistent inflammation of the bladder.

309 Marlboro Street.

ABSTRACT OF DISCUSSION

Dr. Bransford Lewis, St. Louis: In the treatment of cystitis we ought to repress as much as possible the idea that cystitis is an original disease and say that there is no treatment for cystitis, except as it is based on a definite recognition of the cause. The more we can affirm that idea the better for progress in urology. I have for a long time followed the policy that, even though I thought the location of an infection in the urinary tract was in the vesicles or the prostate or the posterior urethra, if I did not make progress, I would do cystoscopy and ureteral catheterization; I have often surprised myself by finding the presence of an infection in one or both kidney pelves. It is often more important to establish the origin of the infection than just the kind of infecting microbe that is present.

Another point relates to the amount of reliance to be placed in ureteroscopy through the cystoscope. I do not have much confidence in my own ability in that direction, or in that of others. I had a peculiar case lately in a girl, 17 years old, whose right kidney was full of stones, necessitating the removal of the kidney, and on the other side a certain degree of infected pyonephrosis without the presence of stone. I have been washing out that kidney pelvis. The question comes up whether it would be necessary to do a nephrotomy for a more positive drainage, or maybe change the position of the kidney, as suggested by Dr. Fowler.

Dr. O. S. Fowler, Denver: Dr. Smith has not taken into consideration one class of cases in which we see cystitis; that is, cases of cystitis following either pelvic or abdominal operations, especially cases in which catheterization has been resorted to afterward. I have seen a number of these cases, and they cause a great deal of trouble. Some of these patients, however, while not having been catheterized, do recover after the washing out of the bladder. In those cases it would seem as if the infection did not extend upward, for in a great number of them we do get kidney symptoms. I have had the opportunity of working out some of these cases and have proved that an infection came from the kidney. I should like to ask Dr. Smith what his experience has been in reference to the postoperative catheterization of women.

Dr. W. T. Elam, St. Joseph, Mo.: Unless there is some definite bladder pathology the word "cystitis" is not applicable. In certain nervous conditions there may be urinary symptoms that resemble to some extent a cystitis. The condition is not a cystitis, however; it is merely a neurosis; and it exists not only in women, but also in men.

Dr. Fowler referred to catheter cystitis. We all know that a congestion may exist as a result of catheterization, which may give a little irritation and may perhaps result in burning and frequent urination. That is not a cystitis unless there is an infection and a pathologic condition which means inflammatory exudates, serous and cellular. A chronic cystitis, in my judgment, is some chronic change in the bladder walls or mucosa. The doctor's statistics are, beyond all question, of value. If they could have been supported by microscopic examinations of the bladder tissue, thus determining absolutely that there was no disease in the bladder, then we could quickly make the attempt to rule out chronic cystitis. After childbirth and after operation, whether catheterization has been done or not, we have urinary symptoms that often appear to be relieved not only by lavage, but simply by introducing a permanent catheter and draining the bladder; yet we all are willing to admit that bladder irritation may come as a result of pyelonephritis or of pyelitis or an involvement of the upper urinary tract. There are a great many cases apparently of neurosis of the bladder, especially in women.

Dr. M. Krotoszyner, San Francisco: I wish to emphasize the importance of expectant treatment, which is apt to yield excellent results in a good many cases of cystitis or infection of the bladder. Being well trained in the use of modern instruments, urologists, as a rule, resort too quickly to instrumentation, by means of which the patient's untoward symptoms are often intensified. Instrumentation for diagnostic purposes is strictly indicated, however, in all forms of bladder irritability that are not benefited by judicious local treatment. In young women particularly the initial symptoms of renal tuberculosis may be marked by frequent and painful micturition, and an early diagnosis in these cases is feasible only on the basis of careful and repeated cystoscopic examinations.

Dr. J. R. Caulk, St. Louis: I agree with Dr. Smith that the great majority of bladder infections are secondary to some other influence. I do not believe strongly in the neurotic element, the nervous bladders in young women particularly. I have seen any number of cases in which patients have been doomed to a life of neurasthenia as a result of this belief, and I think that this section ought to correct this impression.

I do not think that nerve lesions exist and cause distress, but I believe that all these neurotic bladders have something back of them. In the great majority of cases sent to me with that particular diagnosis I have found some lesion in the pelvis—fibroids in the anterior wall of the uterus, or some lesion in the appendages—and I do not believe that we ought to say that a person is suffering from a nervous bladder until we have utilized every means at our disposal to rule out every lesion in the pelvis and upper urinary tract.

Dr. Thomas M. Paul, St. Joseph, Mo.: In regard to the manner in which the *Bacillus coli* reaches the kidney or bladder: There is a source of infection which I believe is usually overlooked. In the act of defecating in the modern toilet, as the fecal mass drops into the water there will be a return splash. The first splash may be composed entirely of clear water, but the subsequent splashes, resulting from the continued dropping of fecal masses, will contain many bacteria. While the mucous surface exposed in the male is small, and infection cannot readily take place, in the female it is much larger and contamination of the vulva is sure to occur. If this be true, it is easy to understand how an infection of this kind can ascend through the urethra and cause a cystitis.

Dr. A. L. Chute, Boston: The last point is well taken, because these persons are all made better by treatment of the bladder, although the source of the infection is above. The bladder is, of course, improved under lavage; therefore these treatments are given forever. In these cases I think that there is not only an infection of the kidney pelvis, but also a kidney pelvis that does not drain itself. My own belief is that disease of the kidney pelvis in the ordinary person, barring tuberculosis, is cured if there is drainage.

Dr. G. G. Smith, Boston: I hoped that this paper would elicit more discussion. I wanted to find out if any of you really have had cases of persistent cystitis in which careful examination showed no source of infection in the kidney or in the mechanism of emptying the bladder, and I must say that although several men have suggested to-day that they have seen such cases of chronic cystitis, no one has mentioned any case which has been thoroughly studied and in which the infection was shown to be residual in the bladder alone.

The criticism was made that in this paper I have considered a number of cases in which true cystitis did not exist. That is not so, because I said, "One of two pieces of evidence was required; either the bladder was seen to be inflamed at cystoscopy, or pus and bacteria were found in the urine."

I have not seen much of the cystitis which follows operation on women. It seems to me that what usually happens is that the woman is allowed to go without urinating until her bladder becomes much distended and then she is catheterized. As we know, catheterization always induces hyperemia, and, as has been shown by the men I quoted, the colon bacillus is present in the urine in twenty-four out of twenty-six women after operation. The bladder is congested by being suddenly emptied, and it becomes infected. Thus you do have a cystitis in these cases, but it clears up under a comparatively simple line of treatment. If it does not do so the infection is found to be seated in the kidney.

I am glad that Dr. Chute brought up the point that bladder lavage will help in these cases of renal infection, because that is true. I have in mind now a patient who was benefited by lavage as long as she kept it up. I grew colon bacilli from both kidneys, and found pus in the urine from both kidneys. Yet she came for bladder lavage because it made her feel better. Infection by the use of toilets does not seem probable for this reason: If cystitis occurred from that we should more often see a pure cystitis without kidney involvement. It seems to me that a strong point in favor of the descending route is the fact that, whereas you may find a pyelitis without a cystitis, you rarely, if ever, find a cystitis without a pyelitis.

Recruits for the Army.—Great difficulty is experienced by the War Department in securing a sufficient number of suitable recruits to fill existing vacancies, on account of the mental and physical degeneracy of the young men who present themselves for examination. During the year of 1912 only 35,837 recruits were accepted from 159,673 applicants examined, a rejection of 76 per cent.—L. M. Mervin Maus, in *Chicago Med. Recorder.*

THE PREPARATION OF PRIVATE HOUSES FOR OPERATIONS

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It is perfectly feasible to arrange private houses for operations so that the lack of hospital facilities need not be felt. An abdominal operation is, of course, more easily done and the patient more easily cared for in a hospital than at the patient's home, but even this type of operation can be adequately cared for at home, provided the preparation is sufficiently well made. Ordinary operations, especially plastics for the repair of the injuries of childbirth, are satisfactorily done in the patient's home. A trained nurse, or one at least accustomed to the care of surgical cases and with a working knowledge of asepsis, is most desirable, but not indispensable, provided the physician is willing to give minute instructions as to the care required and to attend to such details as catheterization himself.

The Choice of a Room.—If possible, the room should be one adjoining the patient's bedroom, and preferably not the patient's own room. The patient is thus spared the sight of the necessary preparation. The paramount question is one of light, and the operating-table should be so placed as to get the maximum amount, hence, near the window. The window can be screened against outside observation by covering it with a single piece of gauze or by pinning together the curtains, provided they are of a material which will transmit the light without too much diminution, or even by soaping or whitewashing the pane of glass. Except for an abdominal operation it is not necessary to strip the room or take up the carpets or rugs. The floor can be protected by newspapers, thickly laid, and over these a sheet, wrung out of a 1:1,000 bichlorid solution, should be spread and should be damp when the operation is begun. Any unnecessary hangings ought to be removed and the furniture moved to a part of the room where it will be out of the way and covered with sheets. The walls in the immediate vicinity of the operating-table should be protected by sheets held up by the glass-headed pins known as Moore's push-pins, and not by tacks. The pins leave no scars, as tacks do, especially in wall-paper and plaster.

The Operating-Table.—This should preferably be one of the models of portable, collapsible operating-tables, but this is by no means a necessity. A kitchen table with sufficient strength of legs answers every purpose. If this is used, the top must be thoroughly scrubbed and then thickly padded, as the thinly padded table is a prolific cause of backache after operations. In many operations, notably perineal operations, a Kelly pad is a most desirable addition; but one that will answer every purpose can be improvised by rolling up rubber sheeting at the sides and back, or even newspapers covered by towels or sheets. The special tables are provided with stirrups and leg-holders for the lithotomy position, when this position is desired. The kitchen table can be equally well equipped with either the Edebohls portable leg-support, which clamp on the edge of the table, or, much better, by a rolled sheet tied about one knee, passed back over one shoulder and out under the other (so that pressure does not come altogether on the patient's neck) and fastened above the other knee. The knots should be on the outside of the leg. This makes the best leg-holder I know. If the Edebohls supports are used, it will be found necessary to tighten the screws with a wrench (no one's fingers are strong enough), for, if the patient should strain, the leverage is enormous. If a chair or stool is needed, a piano-stool draped with a sheet is most satisfactory, but a plain chair (not too low) will answer. The end of the Kelly pad, or its substitute, should drain into a bucket or slop-jar which has been well scalded out.

The special operating-tables have apparatus for the Trendelenburg position; the kitchen table can be equally well equipped by raising the two legs on blocks or bricks, or even, if the extreme position is desired, on the seats of two chairs. The whole table is best draped in a sheet, although this is not essential.

Instrument- and Dressing-Tables.—Two of these are required, one on either side of the operating-table. As these tables often have polished tops, adequate protection must be provided. This is best done by covering the top thickly with newspapers, placing on these a large tin tray and covering all with a sheet, draped so that it will touch the floor on all sides. This is to protect the legs and sides.

Douche-Bag.—This is needed in all perineal operations, and a more efficient means of splashing the wall-paper than an improperly hung douche-bag can hardly be devised. A suitable hook is provided, preferably in the window-frame. An open towel is placed over this hook so that the center of the towel is over the hook. The bag is hung on the hook and the towel allowed to drape down over it. This has proved an adequate protection. The douche-bag and tube are, of course, prepared by boiling.

Instruments.—It is best to boil these where the physician and nurse can keep an eye on them. A large alcohol lamp and a copper tray sterilizer or basin will be satisfactory. If an alcohol lamp is placed in the bathtub, and the instruments are sterilized there, it will guard against the danger of upsetting them and possibly a conflagration. If the instruments are sterilized over the kitchen stove, servants must be warned not to touch them. I have seen a servant dig the various instruments out of the sterilizer with a stove-lid lifter and speculate on their uses.

Dressings.—For all ordinary operations the commercially sterilized gauze and cotton are entirely satisfactory. For abdominal operations the dressings should preferably be steam sterilized either in an autoclave or even in a Rochester steam sterilizer. If the latter is used, the final sterilization should be completed just before the operation. It is not possible adequately to dry dressings so sterilized, and it is better to have them warm and wet than cold and clammy. Sheets and towels can be adequately prepared by freshly laundering them and then ironing with an iron hot enough to come just short of scorching them. The time-honored custom of baking in the oven of the kitchen range is useless. Such dressings are not sterile unless so scorched as to be unfit for use. For gauze sponges, I have always found the commercially sterilized gauze safe. If sea sponges are used, they must be soaked over night in a 1:500 bichlorid or a 1:20 phenol (carbolic acid) solution. Boiling them destroys their absorptive qualities.

Basins.—Unless the physician carries his own nest of basins, he must depend on the household supply. Three at least are needed and they must be boiled. Rinsing or wiping them out with an antiseptic solution is not sufficient.

Scrubbing.—The best arrangement for scrubbing up and sterilizing the hands can be made in the bath-room. Running water and previously boiled nail-brushes are used, and to obviate stooping over, the dishes of soap, alcohol, etc., can be arranged on a bread-board placed over one end of the tub and resting on the sides of the tub.

Rubber Gloves.—Steam sterilized and, hence, dry gloves are best, but this is not always practicable. Boiling is a method always available and is satisfactory. The gloves must be boiled wrapped in gauze or a towel, and should always be boiled flat so that the water can enter them. The custom of boiling gloves rolled up in a ball is a pernicious one, as the inside of these gloves is never sterile and most of the outside is open to grave suspicion.

Sterile Water.—The night before operation a clothes-boiler is filled with water. In it are placed three pitchers and a dipper with a hooked handle. These are boiled for half an hour. The pitchers are hooked out of the water with the handle of the dipper and filled, and then towels are tied over their tops and they are set aside to cool over night. The next morning the clothes-boiler full of water and the dipper are boiled again. Thus by mixing the cold water that has stood over night with the hot water boiled just before the operation a supply ample for most operations is secured.

In emergencies, the bottled water sold at all drugstores is adequate for the cold sterile water, except in abdominal operations. The water in the pitchers can be cooled in a reasonably short time by pouring cold water over the outside of the pitchers.

Supplies Required.—The supplies needed for an ordinary operation are as follows: six sheets; twelve towels; 8 ounces of 95 per cent. alcohol; 8 ounces tincture of green soap; 1 pound of absorbent cotton (two half-pound rolls); one 5-yard roll of sterile gauze; one 1-yard jar of iodoform gauze; one bottle of mercuric chlorid tablets; one 2-ounce bottle of pure glycerol (glycerin, as a lubricant for putting on wet gloves); two ½-pound cans of ether, unopened; three small coarse (not silk) sponges, size of orange; one 1-yard package of sterile gauze (for the etherizer, to avoid opening the larger package).

I have this list printed on cards, and one is sent to the patient's house to guard against details being forgotten.

Nurse's Kit.—I find it useful to provide the nurse who does all the preparing of houses for me with a bag equipped with what we have found needful. This bag is small and easily carried, but contains nine basins, twelve brushes, twelve pairs of rubber gloves; all the catgut used in the operation (from eight to ten boxes being carried); a Kelly pad; douche-bag; razor for shaving patients (especially in perineal operations); gown and uniform; the glass pins (3 dozen) used for protective sheets, and a roll of safety-pins.

It is perhaps unnecessary to point out that all visible disturbances caused by these preparations should be cleared away, and all soiled linen and sponges and water disposed of as soon as possible. This is particularly desirable when everything has been prepared in the patient's room. No signs should be left for the patient to see on recovery from the anesthetic.

1823 Pine Street.

Conceit.—Diagnosis: "It was pretty devised of Aesop: the fly sat upon the axle-tree of the chariot wheel, and said, 'What a dust do I raise!' So are there some vain persons that whatsoever goeth alone, or moveth upon greater means, if they have never so little hand in it, they think it is they who carry it."—Bacon. Remedy: "Nothing can be better adapted to turn man's thoughts off his own self-sufficiency than the works of Nature."—Maund, *Pub. Health Jour.*

A CASE OF SYSTEMIC BLASTOMYCOSIS

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History.—Dr. B. H. A., aged 37, Brownwood, Tex., was admitted to the Post-Graduate Hospital, Feb. 28, 1913. Family history and personal history have no important bearing in the report, but points in past history may be mentioned. The patient suffered from "malaria" for several months when a young child, but did not remember any other illness. At the age of 18 he suffered from what was probably acute appendicitis, but was not operated on. For the past eight or ten years the patient has usually had a severe cold every winter, coughing for about a fortnight and then recovering. During the winter of 1911-1912 he coughed nearly all winter. The sputum was mucopurulent and scanty never bloody or with odor.

Present Illness.—This dated from November, 1912. The patient went from Texas to Chicago and engaged in post-graduate medical work, including necropsies and dissections. Soon after arrival in Chicago, he had a "cold" with coryza, severe cough and scanty mucopurulent sputum. The cough continued up to the time of death and was most marked at night. The sputum was tenacious, mucopurulent, odorless and never bloody until a few days before his death. Shortly after the onset of this cough the patient began to complain of pain in various joints, involving one at a time; first the right knee, then the left shoulder, then the right shoulder, lasting altogether about two months; none of the joints became red or swollen. The patient continued his medical studies. During this period he had a slight fever most of the time, rectal temperature ranging from 100 to 101 F. in the evening. While in Chicago the patient developed a pustule on the left index-finger which did not heal, and there remained a small indurated area covered with a scale or crust which spread from time to time and discharged a trifle occasionally. This area had never been painful or swollen.

Jan. 1, 1913, the patient sailed for Liverpool. During the journey he suffered from pain in the right chest on deep breathing, not very severe or sharply localized. January 8, he was suddenly seized with severe stabbing pain in the right lower chest posteriorly. Deep breathing accentuated this pain. The patient had irregular rigors and high temperature. He entered a London hospital, where a roentgenogram was taken of the chest and abdomen. In consultation with authorities in London it was decided that he was suffering from a liver abscess.

First Operation and Results.—January 15 an operation was performed. Incision was made over the ninth rib posteriorly. No pus was found with the aspirating needle in the liver or pleural cavity. The ninth rib was found to be necrotic for several inches near the point at which examination was made, and the necrotic portion was removed. The sinus has never healed, but has continued to discharge a thin yellowish or brownish fluid in small quantities (there had never been jaundice).

Following the operation, the patient had intermittent fever varying from 99 F. in the morning to 105 F. in the afternoon, with profuse sweating. This type of fever continued. The patient developed the morphin habit on account of severe pain in the right chest. Blood-count made in London was said to be negative. Several small abscesses appeared on the chest and lower extremities, cultures from which are reported to have been negative.

February 22 the patient sailed for New York, arriving on February 28, when he came immediately under my care. During the voyage he developed severe pain along the course of the right sciatic nerve and also a lumbago. This feature caused great distress at the time of his admission to the hospital. Dr. McPhee, who examined the patient at my request, reported finding irritation of the right sciatic nerve, the cause for which he could not determine. Dr. Lattin found, on lung examination, numerous coarse and fine moist râles over the left base posteriorly from the fifth rib down. About the angle of the left scapula there was bronchovesicular breathing. Percussion note was slightly impaired over this region. Breathing sounds were obscured by râles. Over the base of the right lung, below the angle of the scapula, were scattered subcrepitant râles. Under my direction systematic examination was made of the blood and of the excreta. There was no leukocytosis. Two blood-cultures gave negative results. Urine examination was negative. Sputum examination was negative for tubercle bacilli. Von Pirquet test was negative. Wassermann test was negative.

March 22 the patient complained of sudden sharp pain in the right lower chest, especially on deep breathing. This gradually subsided in a few hours. Examination at this time showed a few subcrepitant râles in the right lower axillary region. Breathing sounds were clear. The edge of the right lobe of the liver extended a little below the costal margin, but was not tender. There was marked tenderness on pressure, however, over a large part of the right lobe of the liver. The spleen was not palpable. The patient was fairly well nourished and partook of nourishment sparingly. He was irritable but fully rational during the days shortly after his admission to the hospital, but irrational, at times, later. The tongue and lips were moist and of natural color. The skin seemed ashy, and this ashiness increased as the illness progressed. There was progressive weakness and emaciation, which did not, however, become extreme. Several physicians and surgeons who were asked to see the patient in consultation did not arrive at a satisfactory diagnosis. Roentgenoscopy showed a tendency to consolidation at the bases of both lungs and a moderate degree of enlargement of the liver, marked more by arching of the diaphragm than by extension of the sharp edge of the liver below the costal border. It was my feeling that we were dealing with subphrenic abscess or with abscess of the cephalad portion of the right lobe of the liver, and that the lung consolidation represented an infection by way of lymph-vessels of the diaphragm; although some of the consultants believed the case to be one of bronchopneumonia with lung abscess, based on the physical signs and the roentgenogram, which showed that from the hilum of the lung on the right side, extending outward in the parenchyma, there was an area of diffuse inflammatory invasion.

Later Operations and Course.—On the basis of my feeling that we were dealing with subphrenic abscess or hepatic abscess, the patient was anesthetized, March 26, and an aspirating needle passed in several directions in a search for pus, including the subdiaphragmatic region and also penetrating the diaphragm to the pleural cavity; but no pus was found. The patient suffered very little from the operation.

April 12, after further consultation, it was decided to make a small incision at the lower right costal margin for the purpose of searching for an abscess which might appear on palpation of the liver. No abscess was found on palpation, and a long steel sound passed freely over the dorsum of the liver discovered no area of adhesions, excepting at the site of the London rib excision. There were extensive adhesions, however, about the gall-bladder and the lower margin of the liver to adjacent viscera. These adhesions were separated by sweeping the finger about, and the gall-bladder was felt to be distended. It was not thought best to enlarge this incision for the purpose of draining the gall-bladder at that time, as it seemed desirable to be satisfied with the results of quick exploration.

The patient suffered little from this operation and on April 19 another small incision was made and the gall-bladder drained, in the belief—based on the extensive adhesions in the vicinity—that we might have a collection of pus in the gall-bladder. The gall-bladder, however, contained nothing but a large amount of mucus colored with bile. This operation, like the others, disturbed the patient little, as it was quickly done, but it yielded no result. The patient continued to fail gradually, notwithstanding the application of various general resources for maintaining his strength. Superficial abscesses occasionally appeared on the chest and legs. These abscesses would develop quickly, without redness or induration, and with barely enough pain to attract the attention of the patient, and when evacuated were found to contain a thin yellowish or brownish pus. There was one abscess on the forehead, at the margin of the hair.

May 4 one of the staff men, Dr. Hjelm, obtained a culture of blastomyces from a small abscess of the neck, and a pure culture having been obtained later, the case was definitely determined to be one of systemic blastomycosis. The sputum had been carefully examined, but on account of the number of cocci and bacilli (with the staphylococci predominating) it had been difficult to obtain a culture separating the blastomyces.

The diagnosis of systemic blastomycosis having been established, attention was given to the small scaly area of the left index-finger, which had been considered of little consequence. Dr. Pollitzer, who examined it, decided that it was a small area of blastomycosis of the skin. The patient, on being questioned, stated that he had pricked himself at this point while dissecting in Chicago in November, 1912.

After the diagnosis was established, potassium iodid was given, but this was not borne well and was dropped, my belief being that it is efficient only when we have the skin lesions of blastomycosis, because of the selective action of the glands of the skin in excreting potassium iodid. An examination of statistics seemed to show that it had not been of value in case of systemic blastomycosis.

An intravenous injection of neosalvarsan was given twice, but to this the patient made no response of consequence. A culture of the blastomyces was being developed for the purpose of preparing a vaccine, but before we could employ this the patient died, May 11, from general exhaustion, the last record of vital signs showing a temperature of 102 degrees F., pulse 166, respiration 10.

The patient at that time had been hiccoughing at frequent intervals and tried at many times to vomit, bringing up small quantities of greenish mucus.

Post-mortem examination was not permitted.

Characteristic Blood Examination.—March 2: Leukocytes 10,500, polynuclears 79 per cent., and lymphocytes 21 per cent. The hemoglobin, which was 90 per cent. at the time of the patient's entrance to the hospital, had dropped down to 70 per cent. on April 11. Blood examinations were at all times negative.

Sputum Examination.—Various cocci and bacilli were found, staphylococci predominating.

Characteristic Urine Examination.—March: reaction, acid; color, amber; specific gravity, 1.015; albumin, none; sugar, none; calcium oxalate crystals. Characteristic urine examination in April: reaction, acid; color, orange; specific gravity, 1.020; albumin, negative; sugar, negative; amorphous urates.

Characteristic Rectal Temperature.—From the time of his entrance, February 28, until April 15: Morning temperature varied from normal to 101; evening temperature, from 104 to 105. There was occasional subnormal temperature to 97. After April 15 there was much less variation between morning temperatures, probably because of decreased strength of the patient, and the characteristic temperatures ranged between normal and 102 until May 3, after which the temperature remained not far from normal, with a tendency to become subnormal, from 97 to 98, until the time of his death.

Characteristic Pulse-Rate.—This followed the temperature in an ordinary way until April 15, ranging between 100 and 138; the respiration rate ranged from 24 to 28 during this time. After April 15 there was little change in the respiration-rate; pulse-rate varied from 100 to 128. After May 3, respiration-rate ranged from 18 to 26 and the pulse-rate from 100 to 152.

For ten hours preceding death the temperature steadily rose to 102, pulse-rate ranged from 148 to 166 and respiration remained at 10.

It is probable that systemic blastomycosis is not a particularly rare disease, but the diagnosis is not often made. The number of cases reported from Chicago means presumably that Chicago physicians make the diagnosis more readily than it is made elsewhere.

616 Madison Avenue.

NOTE ON A MOLD, COCCIDIOIDES IMMITIS, FOUND IN A CASE OF GENERALIZED INFECTION IN MAN

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A sample of pus, obtained by incision of a subcutaneous abscess in the case reported by Dr. Morris in this issue of The Journal, was sent to the laboratory for examination on April 23, 1913, Laboratory No. 8511. Microscopic examination of stained preparations of the pus was negative. Plate cultures on ascitic-fluid agar brought to development, after incubation for forty-eight hours, numerous colonies of radiating mycelial threads and a very few bacterial colonies. The appearance of the colonies suggested the possibility of oidiomycosis.

The patient was seen by us on April 25 at the invitation of, and in consultation with, Dr. B. Lattin. The clinical condition of the patient, as well as the history of the illness, was found to be quite in accord with the indication of the laboratory examination. At this time a second specimen of pus was obtained from a closed subcutaneous abscess by aspiration into a clean sterile syringe.

Microscopic examination of this pus suspended in salt solution revealed numerous doubly contoured colorless spheres, varying in diameter from 4 to 25 microns. The larger ones were distinctly granular and filled with rather faintly visible globular bodies varying from 1 micron to 5 microns in diameter. Some of the larger spheres were found ruptured with the small spheres evidently ready to escape from their interior. No budding forms or mycelial threads were recognized in the pus.

On the plate cultures of this second specimen of pus many colonies of mold developed, apparently in pure culture. Each colony consisted of a mass of radiating, interlacing, branched and septate threads, surrounding the remains of a spherical body at the center, from which the colony evidently originated.

The organism is regarded as identical with that discovered by Posada and Wernicke,[1] and first described in the United States by Rixford[2] in two cases, and subsequently studied by Rixford and Gilchrist,[3] who bestowed on it the name *Coccidioides immitis*. The work of Ophüls and Moffit[4] and of Wolbach[5] has established the classification of the parasite as a mold. The specific name *Coccidioides immitis* (Rixford and Gilchrist, 1895), should nevertheless be retained, unless a more complete knowledge of the organism shall finally determine its position in some prior genus of the fungi.

Twentieth Street and Second Avenue.

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SOME INTRA-ABDOMINAL COMPLICATIONS FOLLOWING LAPAROTOMIES *

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Some of the questions that a patient who is suffering from abdominal disease considers before an operation is consented to are:

1. Has a proper diagnosis been made in his individual case?
2. Will the operation cure him of his trouble?
3. Will it leave him in a worse condition?
4. Will it leave a different train of symptoms with an equal amount of suffering?
5. Is the disease of such importance that he is warranted in taking the risk of an operation?

For a number of years I have been investigating the cause of postoperative intra-abdominal disturbances in my own as well as other surgeons' cases that have come to my attention, and have tried to determine the underlying factors in the production of the various symptoms that patients complain of after laparotomy.

Intra-abdominal pain is usually due to some interference with the function of the alimentary canal, and this may be because of acute or chronic inflammation of the peritoneum, which inhibits peristaltic action of the bowel, or to obstruction of a more chronic nature due to bands, kinks and flexures of the various portions of the digestive tract, producing stasis, resulting in retained food, mucus and gas.

When it is possible for the contents of the stomach to pass readily from the stomach through the pylorus, duodenum, small intestines and colon in the required amount of time for digestion, assimilation and elimination of waste products, the patient experiences no particular discomfort; but, if this period is prolonged, decomposition of semidigested food, distention from retained waste products, gas and mucus often result. The patient suffers from local pain, general disturbances and systemic intoxication.

THOROUGHNESS OF THE OPERATION

Associated lesions other than the one especially for which an operation is performed may be equally responsible for the patient's suffering. When a laparotomy is performed it is incumbent on the operator to investigate all abdominal and pelvic organs within his reach to determine if this is the case or not. According to Bottomley, "An attempt should be made to find adequate pathologic cause for the patient's symptoms."

It is essential indeed that the surgeon determine if the function of the stomach or intestines is so interfered with as to modify results. The operative technic and thoroughness of the operation have much to do with the comfort and well-being of the patient after the operation. The carefulness of the work and the method of closing the peritoneum and abdominal wall determine to a great extent whether or not the patient remains well thereafter.

PREEXISTING DERANGEMENT OF THE FUNCTIONS OF THE ALIMENTARY CANAL

In a paper read before the Western Surgical Association, April 10, 1909, on "Chronic Dilatation and Prolapse of the Stomach," I demonstrated the importance of this condition in relation to abdominal surgery. I especially emphasized the fact that a stomach which is much dilated or prolapsed works less perfectly and causes much more distress following operations because of retained contents than one of the normal size and in normal position.

Recently I have had several cases in which chronic dilatation and prolapse of the stomach existed, and it was predicted at the time that these patients would have much postoperative disturbance, such as nausea, vomiting and distention. This was verified in nearly all instances. In operative cases having no enlargement or prolapse of the stomach there was less postoperative pain and often no vomiting or distention.

In persons who had previously been operated on for other troubles, with much discomfort following, and in whom there was found a badly prolapsed and dilated stomach, causing such impairment of functions that it was deemed necessary to do something specifically for this dilatation or prolapse, when the stomach was suspended in the proper position by operation little or no postoperative gastric disturbance arose.

Thorkild Rovsing has given sufficient evidence of the importance of a prolapsed stomach and colon and reports sixty-three personal cases in which operation was performed, with 50 per cent. of positive cures and 75 per cent. of cures and improvements.

If we have any adhesions around the pylorus which interfere with the normal emptying of the stomach at the proper time, there may result a distention of this organ followed by nausea, vomiting and regurgitation of bile. A distended stomach interferes with the large and small bowel action. Kinks may be produced and fecal substance and gas trapped within isolated loops. A greatly enlarged cecum with much accumulation of mucus, infectious material and gas further adds to the distention.

Intracolonic tension produces a thinned-out atonic wall which is of less protection to the outlying serosa from infection within. There is a transmigration of the infectious micro-organisms through the thin walls and local infection of the endothelium may result.

The general intra-abdominal tension forces the coils of the intestines in close contact, and in the presence of infection or any raw or denuded surfaces adhesions necessarily follow which may be temporary or permanent according to the variety of the infection, the amount of pressure and the tissue involved. The same rule as applied to joints by Murphy holds in diseases of the abdominal cavity.

MUCOUS COLITIS AND MEMBRANOUS PERICOLITIS

In cases of mucous colitis I have found that a thorough irrigation of the colon either in the knee-chest position, elevated hip position and right-sided flank position, materially lessens the intra-abdominal postoperative distress

This is especially emphasized when associated with that class of cases known as a membranous pericolitis, in which the operator has been compelled to separate bands of adhesions or liberate the transverse colon that has become fixed to the ascending colon. In such patients the postoperative management and subsequent treatment is important indeed, and determines to a great extent whether we bring about a better or worse condition of the patient.

I know of no class of cases in which the ingenuity of the operator is more put to the test than in this variety, as without question they are the large majority of cases that give the surgeon the most trouble following surgical work. They are the class in which frequently

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* Read before the St. Louis County Medical Society, Duluth, Minn., June 10, 1913.

the appendix alone has been removed with little or no benefit.

Postoperative adhesions are increased rather than eliminated in such cases if incomplete surgery has been performed. If the constricting bands are not separated the colon functionates imperfectly, the kinks remain, postoperative stasis and tension become quite pronounced and the suffering severe. Retained infectious micro-organisms are forced through the thin colonic walls, often producing local peritonitis with an aggravation of the membranous pericolitis.

STATE OF THE MUSCLE TONE OF THE ABDOMINAL WALL

Persons with lax pendulous abdominal walls with little or no tone or strength to maintain the normal and proper function of the within contained intestines are liable to have inactivity of the intestines following an operation. There must be in the normal person elastic tone and tension of the abdominal muscles to facilitate the proper propelling of contents and the evacuation of waste products. If this force is wanting, the functions of the intestines and stomach are imperfect and distention, fermentation and intra-abdominal tension often result.

The strength of the abdominal muscles in suitable cases should be developed as much as possible before the operation and a substitute employed temporarily for this tone directly following the operation and further treatment continued thereafter.

CHARACTER OF INFECTION

So long as an infection of any nature remains present within the abdomen and there is a destruction of the endothelial cells, adhesions occur, and unless the operation favors the elimination of the infection or inhibits the action of the micro-organisms it is of little or no benefit.

The operator should determine the nature of the infection in the given case. If it is of a streptococci type the aim and desire should be to remove the infectious material as thoroughly as possible; then we may expect almost perfect results and few, if any, subsequent adhesions. The same may be true in an infection from colon bacilli, but in tuberculous or gonorrheal infections it is often so impossible to remove the diseased tissue and infectious micro-organisms that we must give a less favorable prognosis.

Adhesions may have been separated at the time for various reasons, such as the removal of a diseased appendix, tube or cystic ovary, but they will recur in some instances and remain until the patient either succumbs or recovers from a general infection. In gonorrhea we may have a few adhesions contiguous to the part removed, as in the stump of a tube, but by careful systematic work we are able to eliminate this possibility to a great extent by taking out the cornual portion of the uterus and carefully covering the stump with the healthier uterine tissue and peritoneum.

RAW SURFACES OR DENUDED AREAS LEFT WITHIN THE ABDOMEN AFTER OPERATION

Maurice Richardson expressed a belief that raw or denuded surfaces within the abdomen are the most frequent sources of intra-abdominal adhesions. Owing to the increased intra-abdominal tension following an operation, raw surfaces should be obviated as much as possible, and as little traumatism produced as is consistent with a thorough investigation and treatment of the affected tissue.

Every surgeon should be especially careful not to leave surfaces not enveloped with normal peritoneum exposed to contiguous coils of intestines. Exposed suture lines should be as few as possible within the abdomen.

All surgical work done on the female pelvic organs should be so carefully performed that little or no denuded or wounded serous membrane remains within the abdomen or exposed suture lines.

Tubes should be removed so completely and carefully, approximating the serous membrane above the stump and broad ligament wound with plain catgut, that there will be slight chance for loops of intestines or omentum to become fixed thereto. This same rule should apply in doing hysterectomies and in enucleating uterine fibroids, and in the removal of cysts of the ovaries or resection of them fine plain catgut alone should be used to approximate the parts, as this absorbs early. We should be especially careful if more or less infected tissue remains at or near the point of the suture line.

In stomach, intestinal and gall-bladder surgery there is more or less soiling of the serous covering, and if any exposed denuded surface remains, it should be surrounded with omental tissue when suitable and possible.

If there is an unavoidable denuded surface left, detached omental grafts are in most instances best employed. They are preferable to such material as gutta-percha, silver foil, rubber, silk, Cargile membrane, petrolatum, etc.

When an actual cautery can be employed to a raw surface, there is less likelihood of adhesions from deep cauterization, for when the scab separates there is usually a healthy membrane beneath.

REMOVAL OF APPENDIX

A number of operators are content, in ligating the stump of the appendix, to leave it exposed within the abdomen. It seems to me that this invites adhesions thereto, as we all know that the stump of an appendix has more or less infectious material within its lumen and that it must become fixed, at least temporarily, in some way or Nature must envelop this infectious material with some tissue or exudate.

I believe that there is little call for silk or Pagenstecher thread in appendiceal operations, and it may be eliminated in many other operations in which it is employed at the present day. A non-absorbable suture acts as an irritant, increasing the amount of exudate around the suture to which adhesions can and do occur. By ligating the stump of the appendix with plain catgut, cauterizing and inverting the stump, and by employing a chromic catgut purse-string suture, we accomplish all that is desired and prevent possible adhesions at this point. A number of patients have been reoperated on in which silk or Pagenstecher thread had been used, especially when used in the infected cases.

OPERATIVE TRAUMATISM

It is surprising the amount of abuse the peritoneum will endure and recover therefrom. Surgeons who operate with bare hands or wear linen gloves no doubt injure the serosa of the intestines to a great extent by nail wounds, pressure or rubbing of the linen gloves.

The amount of traumatism and areas of denudation produced by sponges and gauze packs within the abdomen is hard to estimate. The coils of the intestines are frequently caught between the folds of gauze in endeavoring to push them out of the field of operation and are so severely injured that it is no wonder that postoperative discomfort results from ileus kinks, stasis and adhesions, at least of a temporary nature, from undue pressure, traumatism and denudation of their serous covering.

Injury to the peritoneum by sharp unsuitable retractors, artery forceps and other instruments is not uncommon.

The use of a rubber dam if there is much intra-abdominal tension may, in some instances, be called for: the surgeon should at least place the patient in such a position as to have the intestines gravitate to a point away from the field of operation and carefully and systematically hold them back with moist rolls of gauze and not necessarily crowd them roughly away from the field of operation so as to produce injury of their serous covering.

All unnecessary wounds of the visceral and parietal peritoneum should be avoided, as to these areas omental adhesions are wont to occur or coils of intestines to unite.

UNDUE EXPOSURE OF THE VISCERA

Prolonged exposure of many loops of intestines without the abdominal cavity to cold air and extra abdominal pressure, as well as unclean skin and wound surfaces, is wrong. A portion of the circulation of these loops may be temporarily arrested with a thrombosis of some of the blood-vessels, all of which may invite postoperative ileus, intra-abdominal tension, infected peritonitis, obstruction and adhesions.

FOREIGN SUBSTANCES

Inadvertently leaving gauze or instruments in the abdomen are unfortunate accidents and are not infrequent sources of postoperative discomfort and pronounced adhesions.

As soon as the abdomen is opened only large pads should be used to sponge out the abdomen and large three-yard-long wet rollers of gauze used to coffer-dam the field of operation. By this plan I am sure fewer of these accidents will occur.

DRAINAGE

The subject of drainage is a large one, on which a great deal of discussion has taken place. I long ago formulated a few simple rules which have not varied much in years. If there is a great deal of bloody exudate in an operative field within the abdomen, rubber-tube drainage with fixed or collapsible walls is utilized only so long as there remains an undue amount of discharge, usually for about forty-eight hours, when drainage is removed. Blood makes a suitable medium in which infectious micro-organisms develop. An increased amount of retained blood results in an increased area of infection or organized exudate and adhesions. The early removal of this exudate lessens the area involved and the number of adhesions following.

Septic areas are drained likewise, but for a longer time, until a channel has formed through which this exudate or infectious material may escape. Gauze drainage is seldom if ever indicated, as it drains only for a short time and becomes glued to contiguous tissues, and this gauze, on removal, separates the endothelium from the intestines or inner surface of the abdominal wall, leaving denuded areas which favor further infection and adhesions.

Drainage is established so as best to favor the exit of the discharge and no undue pressure is allowed on the abdominal viscera by drainage material, the patient being placed in a position most favorable for drainage, often laying over on the abdomen.

CLOSURE OF THE PERITONEUM AND ABDOMINAL WALL

From secondary operations performed on cases previously subjected to laparotomies, we are convinced that the adhesions of the omentum and intestine to the suture line utilized for closing the peritoneal opening are far too frequent. Patients suffer so often with a dragging or pulling sensation at this point with such tension on the transverse colon and stomach that there is an interference with their normal function. Cramp-like pains, nausea, vomiting and stagnant stomach and bowel contents frequently occur, due to a kinking of the pylorus or colon on account of this pull. Surgeons have been generally satisfied to stitch up the peritoneum with an over-and-over running suture of catgut, and have allowed this to suffice even though there may be quite large holes left in the peritoneum through which the omentum may protrude or become attached to the tissue outside of these openings.

Operators often overlook the presence of the fascia layer back of the recti in closing median incisions. This tissue is often allowed to retract and is not brought to the median line with the peritoneum. The peritoneum alone is so thin in many instances that it will scarcely hold the suture when any tension is put on it. This tissue should be included with the peritoneal suture and will lend material support thereto and often prevent postoperative hernia. It is important that the needle does not penetrate the visceral peritoneum or omentum, as temporary or permanent fixation of the tissues so caught may result and much discomfort, or even obstruction of the bowel, occur.

I have also endeavored to pass the suture in such a manner as to have the healthy serous membrane in close apposition to the opposite side by passing the suture back and forth; this is a running Halstead suture according to the Murphy method. This plan gives a less suture-surface exposure and minimizes the raw places within the abdomen.

Direct muscle and fascial approximation are important in closing the abdomen. A running stitch of chromic catgut, including the fascia and muscle, alternately with a stitch including fascia alone, makes a careful approximation. I have followed this method for a number of years and have had very satisfactory results where drainage due to abscess was not necessarily established. Postoperative hernia is so often followed by impaired bowel function and by adhesions with so much suffering that it should never occur in clean cases.

POSTOPERATIVE MANAGEMENT OF THE CASE

If intra-abdominal tension is one of the factors in the production of postoperative distress and danger, we should consider all elements in the production of this tension and prevent or eliminate them early. First and most important is acute gastric dilatation. In such cases the stomach-tube should be used as soon as much gastric distention is recognized and before any amount of distress has been experienced, especially in cases in which a chronically enlarged or prolapsed stomach has been observed.

This procedure will prevent many cases of so-called postoperative peritonitis and heart weakness. It will save many lives and go a long way toward preventing the adhesions which follow in the wake of operations.

Surgeons are more neglectful of the kind and amount of food and drink that their patients receive after operations than they should be. Few patients with stomach disturbances can stand the carbohydrates; these often cause distress and distention. Such patients do not endure cold drinks well. Hot alkaline aqueous solutions and hot liquid food are best tolerated to begin with. A rise of temperature, pain, distention and a blocking of the drainage-canals follow in too early and forced feeding. Pus is forced into other abdominal recesses with enlarged patches of peritonitis and adhesions.

The position of the patient should also be considered if there has been a considerable amount of pelvic work done not requiring drainage, and especially if there is a prolapsed stomach elevating the foot of the bed will assist restoration of position and function of the stomach and intestines. often avoiding the possibility of adhesions within the pelvis. Hepatic and splenic kinks of the colon may be overcome at times by this procedure. Many cases should be observed for weeks and months after operation, especially cases of visceroptosis and membranous pericolitis associated with colitis, as by selecting the diet for the patient and insisting on proper exercise and support for maintaining the tone of the abdominal muscles and a suitable course of treatment to overcome the colitis, symptoms formerly the outgrowth of this disease will, as a rule, be permanently removed.

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ERYSIPELAS

CLINICAL OBSERVATIONS ON 800 CASES, INCLUDING 95 TREATED BY BACTERIAL VACCINE AND 20 TREATED BY PHYLACOGEN

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The observations which follow are drawn from my experience with 800 cases of erysipelas which have been under my care in the erysipelas wards of Bellevue Hospital during seven periods of service from February, 1909, to April, 1913, an aggregate of forty-two weeks.

DURATION

So many claims have been advanced for the efficacy of various forms of treatment in limiting the duration or extent of this disease, that I have had especially in mind to determine the average febrile period of various forms of erysipelas (drawn from a large series of cases practically untreated), in order that there might be a background on which the effects of treatment might be contrasted. In reckoning the febrile period, I have counted the days from the onset of the disease until the rectal temperature has remained at or below 100.

1. Uncomplicated facial erysipelas cases (500) ran an average duration of 6.77 days.
2. General body and migratory cases (fifty-six) averaged 14.44 days.
3. Leg cases (thirty-three) averaged in days, 10.88.
4. Complicated cases (211), including facial, body and extremity types of cases in which there was concurrent disease, that is, septicemia, extensive cellulitis, mastoiditis, empyema, tuberculosis, rheumatism, pneumonia, acute alcoholism, etc., were so variously influenced by the complication that an average duration loses significance. But in these cases the average duration is about two weeks

From year to year there was some variation in duration. That is, in 1910 and 1911, the average in days for facial cases was 7.3, whereas in 1913 it was but 6.3. In making up these averages there were numerous cases which lasted only two, three or four days, as well as a number which lasted ten, twelve or rarely twenty days.

FEVER

The temperature in the facial cases usually was high, that is, from 102 to 104, was remarkably remittent and irregular in type in the majority of cases and the termination was by lysis. The temperature curve in quite a number of them resembled that of lobar pneumonia, rising abruptly to 104 or 105, and there remaining for from five to seven days and falling suddenly as the disease defervesced by a typical crisis. Afebrile cases are rare but I have records of eight such cases of typical facial erysipelas, or 1 per cent. of the series.

OCCURRENCE

Sex.—In our cases at Bellevue among adults, males were affected more often than females in the ratio of 2:1, due, undoubtedly, to their greater exposure to inclement weather, their greater liability to face and scalp wounds, their addiction to alcohol and to less cleanly habits.

Season.—Numerically, erysipelas is a disease of the colder and spring months, for in contrasting my periods of service in February and March with those of August and September, the former showed two and one-half times as many cases as the latter; especially was this true of the facial type of cases which were thrice as numerous in the colder months. The prevalence of colds in the head with abrasion of the nasal mucous membrane often affords a point of entry for the infection.

Age.—Infants (under 2 years of age), sixty-three cases, approximately, 8 per cent. Children from 2 to 16 years, approximately, 1 per cent. Adults from 20 to 55 years, approximately, 88 per cent.

ETIOLOGY

The point of entrance of the infection in facial type of cases, which number nearly seven-eighths of all, was through the nasal mucosa in the great majority, who gave a history of a preceding coryza. In others there were abrasions or wounds of the face or scalp, from operations on the nose, from operations for mastoid disease, from eczema of the scalp in infants, etc.

The cases in which there was a wide-spread body involvement either were migratory from the face or extremities or, as was common in infants, began with an infection of the umbilicus, an irritation of the buttocks and vulva or originated about operative wounds of the chest or abdomen. Leg ulcers and wounds accounted for the cases which developed on the extremities.

ONSET AND COURSE

Chills, general malaise, headache and rise of temperature generally ushered in an attack, and preceded the appearance of the local lesion by from twelve to twenty-four hours; although in many cases the pain, burning and redness of the skin were the first symptoms noted by the patient. Vomiting had occurred in only a few of our cases.

The febrile movement and the duration in the average cases has already been mentioned. Typical facial erysipelas which starts at the bridge of the nose and spreads in butterfly pattern rather symmetrically over the cheeks, may remain thus limited, but in many cases it proceeds to involve the ears, the forehead, the scalp and the neck, down to but not beyond the collar-line, except in the small percentage of cases which are of the migratory type. The characteristic appearance of the lesion, the early bleb-formation and the succeeding desquamation, I shall not attempt to describe.

Erysipelas, which starts on the face or trunk and spreads to the extremities, usually travels down both arms or legs with remarkable symmetry from day to day. Naturally, erysipelas which begins low on an extremity travels upward toward the trunk, the only direction in which it may extend, but I do not believe that this is at all influenced by the lymphatic flow, for I believe that one of the most important points about erysipelas is that it spreads as easily in directions counter to the lymphatic current as with it and that this fact is valuable in differentiating it from the redness of a cellulitis or lymphangitis. The advancing border, too, is usually irregular, with tongue-like projections.

SEQUELAE AND COMPLICATIONS

Superficial abscesses in the eyelids are very frequent and often there are collections of pus deeper in the cellular tissues of the areas over which the erysipelas has traveled. In other cases septicemia develops with the formation of metastatic abscesses.

Pneumonia is a frequent concomitant, especially in the winter season and among those addicted to alcohol. Nephritis, as shown by albumin and casts, was often a feature of cases in which high temperature was present, but the three deaths due to nephritis were in cases in which nephritis already was chronic.

RELAPSE AND RECURRENCE

Both are notoriously common in this disease and it would seem that, as in pneumonia, the result of the infection was to lower resistance, rather than to confer a lasting immunity. More than 10 per cent. of our cases gave a history of one or more previous attacks and I feel sure that more careful histories would show a much larger number of such patients. Several patients had had as many as six previous attacks.

CONTAGION

Is erysipelas an easily communicable disease? In my opinion and experience, it would seem to be not more so than streptococcus and staphylococcus wound infections, cellulitis, abscesses, etc. Undoubtedly erysipelas is inoculable from one part of the body to another and from one patient to another, given a point of entry, but with modern aseptic precautions this should occur no more often than does the infection of a clean wound from a suppurating wound in the next bed in a surgical ward.

My reasons for this opinion are as follows: In our 800 cases there were only four which suggested contagion; in one, a male nurse, who had worked for several months in a ward with twenty erysipelas patients contracted facial erysipelas after a cold in the head. The other three developed before entrance to the hospital and were in children; one nursing infant contracted erysipelas from its mother; the remaining two were in children under 4 years of age whose mothers were coincidently affected.

It is significant that no more than three cases of family contagion occurred in a series of 800, drawn largely from crowded tenement conditions of life; especially when one considers that very many of the patients remained in their homes during three to five days of the disease without any isolation, and also that many returned to their homes while desquamation was still in progress.

Mothers frequently continue to nurse their infants in our wards while the infants are passing through an attack of erysipelas, and yet no mothers have contracted the disease. No cases of erysipelas developed in our wards among the very numerous cases of cellulitis and lymphangitis which were admitted under erroneous diagnoses. No cases developed among any of the visitors, nurses or doctors with the exception of the case previously mentioned.

MORTALITY

In the series of 800 cases there were ninety-three deaths, or 11.625 per cent. The distribution according to sex and age was as follows:

Adult males, 480 cases with 49 deaths or 10.21 per cent.
Adult females, 257 cases with 19 deaths or 7.4 per cent.
Infants (under 2 years), 63 cases with 25 deaths or 39.7 per cent.

According to the lesion the mortality varied as follows:

Facial cases, 500 with 27 deaths or 5.38 per cent.
Body cases, 56 with 28 deaths or 50.0 per cent.
Leg cases, 33 with 9 deaths or 27.3 per cent.
Complicated cases, 211 with 29 deaths or 13.7 per cent.

The type of the disease usual among infants is of the migratory or general body form and hence the mortality is highest among them. As to the facial type of cases it is noteworthy that in the 173 cases in adult women there were but three deaths, or 1.73 per cent. Addiction to alcohol, so common among adult males, accounts in part for the great discrepancy, between the sexes, as it predisposes to acute alcoholism and pneumonia as well as intensifies the toxemia of the disease.

The causes of the ninety-three deaths so far as they may be clinically differentiated, seem to fall under the headings which follow, although the alcoholism and toxemia cases were often combined.

Toxemia of erysipelas	36
Septicemia	19
Pneumonia	16
Nephritis	3
Endocarditis	3
Acute alcoholism	16

DIAGNOSIS

The diagnosis of typical facial erysipelas is usually easily made from the characteristic skin appearance, the fever, the bleb-formation and the desquamation, but even here cases are frequently sent in as those of erysipelas when there is merely an area of inflammation about an infected scalp or forehead wound. Erysipelas of the legs or arms or body, unless it be in cases which have extended from the head, presents much more difficulty in diagnosis and I believe that it is often impossible to differentiate cases of erysipelas in the leg from cases of cellulitis or lymphangitis.

Certainly in my experience, about half of all the so-called cases in the leg which were admitted to the erysipelas ward were cases of cellulitis pure and simple, and were at once cleared up either by wet dressings or on giving exit to the pent-up pus, and yet these very cases may have been pronounced erysipelas by competent surgeons and had been transferred on account of such a diagnosis from surgical wards in various hospitals of this city. A visit to the erysipelas wards during August and September when, as has been said, cases of the facial type are much less numerous, rather gives the impression that the wards are those in which patients with cellulitis of the legs and suppurating wounds are being treated.

The great difficulty in making a diagnosis when erysipelas starts on the extremities or the trunk lies in the fact that, in these cases, the advancing border is usually less well defined and elevated than in the facial type of cases, perhaps from the presence of a larger quantity of subcutaneous areolar tissue, which is able to accommodate the thickened deeper layers of the skin, without causing marked elevation of the margin.

TREATMENT

Internal Medication.—The administration of iron and of quinin has been long recommended for erysipelas and we have used these remedies in many cases without seeing any striking beneficial results. In fact the iron often deranges the already enfeebled digestion. For this reason in most of our cases no internal medication was prescribed aside from sedatives, stimulants and cathartics as might be needed.

Local.—The routine treatment for cases of facial erysipelas in our wards consists in the use of continually wet cold compresses. Beside each bed is a bowl of boric-acid solution in which ice is placed and cloths frequently moistened with the solution are continuously kept on the face. This method is simple, cleanly, harmless to the eyes, inexpensive and seems effectually to relieve the pain and burning in the affected area. For cases in which the leg or arm is involved, wet dressings of boric acid or aluminum acetate are used.

The use of local applications in migratory cases in which there is involvement of the body is more difficult and indeed wet dressings would both be uncomfortable and, in the cold months, might predispose to pneumonia; usually no attempt is made to cover these areas, but occasionally ichthyol is applied or the areas are painted with picric-acid solution.

The use of solutions of phenol (carbolic acid), mercuric chlorid, etc., is dangerous and does not limit the spread of the lesion and accomplishes no more than plain water or boric acid. We have painted the area and circumscribed it with pure phenol, with strong tincture of iodin, with ichthyol, with collodion and with picric acid, only to behold the erysipelas spread readily and rapidly beyond these barriers, unless the case were itself a very circumscribed one, as is often encountered on the face or neck. Phenol, 1:40, we have injected into and under the skin at a distance from the advancing margin, but in each case the disease advanced beyond this line at one or more points, and in one case there resulted a very ugly slough of the skin at the site of the injection. Ichthyol, which is the most widely used local application, does not give the patient as much relief as cold compresses and besides it is dirty and not curative.

VACCINE TREATMENT

Through the kindness of Dr. T. W. Hastings and Dr. Elser of the Cornell University Medical College Laboratory, and of Drs. Youland and Boehm of the Bellevue Hospital Laboratory, who prepared vaccine for us, we were enabled to use vaccines in ninety-five cases out of the eight hundred.

Mortality.—Of the ninety-five vaccine cases, sixty-four were, on admission, of an uncomplicated facial type and there were four deaths; thirty-one were of the leg or body type and showed seven deaths; a mortality of 11.5 per cent. in the ninety-five vaccine cases as against 11.625 per cent. in the whole series of eight hundred cases.

Duration.—The average febrile period in the sixty-four vaccine cases of the facial type was 7.8 days; the average in days of the thirty-one cases of the body and leg type was 15.4 days. Both these figures are slightly larger than in the whole series of eight hundred cases, as before noted.

Immunity.—Four patients had recurrent attacks of erysipelas within from two to ten days after the attack during which they had been given from five to seven increasing doses of vaccine.

Limitation of Lesion.—In cases in which there was localized facial erysipelas on admission, in which vaccine treatment was then instituted, at least seven developed the migratory form of the disease which spread down over the body.

Effect on Symptoms.—No constant or significant effects were to be noticed either in the temperature curve or in the symptoms of the disease after these injections, and such irregularities as occurred on the charts were to be found on many charts of untreated cases which were in the wards at the same time.

Complications.—Cellulitis and abscesses occurred in some of the vaccine cases as in those not so treated.

Preparations and Dosage of Vaccines Used.—In 1909 stock erysipelas vaccines prepared by Drs. Hastings and Elser from a virulent case, were used as follows:

Dr. Hastings' vaccine at intervals of two and three days, in doses ranging from a minimum initial dose of 15 millions up to a maximum final dose of 300 millions. One facial case, after receiving on the fourth, fifth, sixth, seventh and eighth days, respectively, 30, 60, 90, 225 and 300 millions, had an immediate relapse and ran a total fever duration of fourteen days. Dr. Elser's vaccine was given daily in constant dosage of only 6 millions.

In 1910 we used a stock vaccine from a virulent case, in daily doses of 10, 20, 40 millions, thereafter continuing at 40 millions.

In 1911 Dr. Boehm prepared a polyvalent vaccine of a number of strains of streptococci from cases of erysipelas which was given in daily increasing doses; thus 10, 20, 30, 50, 80 millions, rarely exceeding 50 millions.

In 1912 Dr. Youland made up a similar polyvalent vaccine from ten different strains of erysipelas streptococci. This was given in daily doses, beginning with 5 10, 20, 30, 50, 80 millions, rarely exceeding 50 millions. Also a few patients were given one single dose of 100 millions of this vaccine.

PHYLACOGEN TREATMENT

In February and March of 1913, Parke, Davis & Co. volunteered, through their representative, Dr. Waldecker, to supply us with their Erysipelas Phylacogen for trial in a series of cases. Their representative personally superintended the selection of cases, and the administration of the Phylacogen. As the Phylacogen was used only in one season and not over a period of years we must contrast it with the statistics of all cases in the wards at the same time.

Mortality.—We had a total of one hundred eighty cases of erysipelas with nineteen deaths, or 10.6 per cent. The twenty Phylacogen cases showed two deaths, or 10 per cent. Of the Phylacogen cases sixteen were of the facial type, the treatment usually being instituted on the second, third or fourth day.

Duration.—The average febrile duration was 6.5 days, whereas in the same period there were 115 facial cases not treated, which showed an average duration of 6.3 days. The four Phylacogen cases of the body type had a duration of 15.75 days, against an average of 13.4 days in the remaining 17 cases not so treated.

That neither immunity nor limitation of the disease were afforded in the Phylacogen cases is instanced by the following:

One man, C. B., during his first attack of facial erysipelas received three injections of, respectively, 2, 4 and 6 c.c. of Phylacogen and was readmitted a few days later with a recurrent attack.

A strong laboring man of alcoholic habit received on the third, fourth, sixth, tenth and nineteenth days of the disease, respectively, 3, 7, 10, 10, 10 c.c., but the disease, at first limited to the face, later spread over the whole body and extremities, with pus formation about the elbow, and death resulted on the twenty-second day.

Effects.—After administration of the Phylacogen I could see no constant influence on the temperature. In some cases there was an immediate rise, followed next day by a fall; in others the temperature rose and remained higher; in still others there was no change. In a number of cases the area of injection was very painful and complaint of it was made by the patients.

Inquiries made as to the subjective symptoms showed that a few of the patients felt chilly after the injection, but as concerned relief of pain or discomfort I could elicit no difference between those treated by Phylacogen and those not so treated.

Administration.—The injections of Phylacogen were made subcutaneously on successive days, beginning with 2 c.c. and increasing 2 c.c. daily up to but not exceeding 10 c.c., which last dose might be repeated. Just what is represented by this dosage I do not know, for I was not informed.

CONCLUSIONS

1. Facial erysipelas is a self-limited disease with an average febrile course of less than seven days; therefore any remedy employed must have an immediate effect if it is to influence the course of this form of erysipelas, as many cases do not come under observation until the third or fourth day.

2. Vaccine treatment, as administered in the preceding series of ninety-five cases, will naturally be open to much criticism by enthusiasts in vaccine therapy, and it may be said by one or another that the preparation or the dosage, or the intervals were incorrectly planned and administered. In answer, I can do no more than submit the results as seen in the ninety-five vaccine cases in the series of eight hundred cases and refer again to the fact that different preparations, doses and intervals were to some extent tried out. The difficulty of obtaining cultures and preparing autogenous vaccines and the short duration of the average case, render this form of vaccine very difficult to employ.

From our experience with vaccines in erysipelas I must state that the duration of the disease was not at all lessened, the mortality remained at the same level, and there was no immunity guaranteed against recurrence, against spreading of the lesion, nor were complications, such as cellulitis and abscesses, prevented; from the statements furnished by the patients, moreover, I could not gather that there was any amelioration of the subjective symptoms.

3. By inference from the series of twenty cases treated with Phylacogen, the same conclusions must be drawn. The average duration was as usual, the mortality practically the same, relapses and recurrences also occurred and pus-formation and spreading of the disease occurred in the usual proportion of cases.

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TUBERCULOSIS OF THE GENITAL ORGANS IN CHILDREN *

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We understand by this title the localization of tuberculosis in the prostate, seminal vesicles, epididymis or testicles. The results of a large series of necropsies by a number of observers show that in children tuberculosis is present in a large percentage of cases. During the first four months it is rare, but it increases rapidly as age advances. In almost every case in which it is found post mortem in the first six months of life, it is thought to be the cause of death, while in older children it is frequently found at necropsy when they have died from other causes. Even in children, tuberculous lesions of the genital organs are no longer museum curiosities, and should receive careful consideration in the classification of diseases that are known to affect these structures.

As a result of the advance in pathologic, histologic and bacteriologic investigation we are able to demonstrate that such cases are to be found and have no restriction as to months or years of life. The frequency, however, with which tuberculous disease of the genital organs occurs in children is still a disputed question.

Hutinel and Deschamps assert that it is as common in infants as in males after puberty. Broca found forty-four in 46,000 cases examined in hospital patients. Jullian found seventeen cases in 5,566 patients in private practice. It would, therefore, seem to be most frequent in private practice.

Tuberculous disease of the testes has been observed at all ages. Dreschfild reports a congenital case; Ashy one at 7 weeks, and Jullian one at 1 month. Bacillary localization in a child is rare, due no doubt to the fact that the testes in children are latent organs, having a scant blood-supply and not so predisposed to blood infection.

According to our theory of tuberculosis of the male genital organs, it is much more common after than before puberty, for it is a well-known fact that tuberculosis is more likely to affect parts in which growth and physiologic functions are most active, as for instance the long bones in children. If the internal secretion of the male genital organs is of any importance in the development of the child, there is no evidence of this activity in the histologic examination of the glands until the age of puberty is reached and the organ prepares itself for its active sexual life. Clinically, the more frequent occurrence of genital tuberculosis between the ages of 20 and 40 would seem to substantiate this theory, for at this period the physiologic activity of the generative organs is at its height.

These organs also at this time of life are more predisposed to injury and infections which so frequently precede tuberculosis in these regions. In ninety-three cases involving the testes in children reported by a number of authors, forty-four were under 2 and forty-seven over 12 years of age; that is to say, about half of the cases occur in the first period of childhood.

Generally it is localized in one testicle; however it often affects both. In the first period of childhood it occurs nearly as often on one side as the other, but after the age of 12 it occurs more frequently on the left side. This is thought to be due to disturbed circulation during walking. In my two cases, the disease was on the left side. There was no history of traumatism, but in both cases a family history of tuberculosis, and whether or not we are justified in attributing the more frequent occurrence on the left side to some difference in the return of the venous blood-supply, the same as the frequency of varicocele on the left side, remains to be proved.

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

Tuberculosis of the undescended testicle in infants is very rare. Reference is frequently made, however, to ectopic testes as being predisposed to tuberculosis, yet I know of no undoubted case reported. This may be due to the fact that most all undescended testes are atrophied and the physiologic activity, while present, is very slight.

Just what condition predisposes the male genital organs to tuberculosis is at present imperfectly understood. The observations of different clinicians present no uniform views, and many times they are diametrically opposite. The fact that the disease has become generalized when studied in the post-mortem room is no valid argument for such cases as come to the surgeon presenting local areas of tuberculosis in the generative organs. It is only fair to presume that it may be disseminated from this local area the same as from other organs of the body if this source of infection is not removed.

Personally, I believe that in some cases the male generative organs are the seat of primary tuberculosis. Such cases are, of course, few compared with secondary tuberculosis complicating tuberculous affections of other organs of the body. If the tubercle bacilli enter the circulation they find in the tortuous blood-vessels of the complicated genital tract a favorable condition for their mural implantation, growth and reproduction. The frequent localization in the epididymis may be due to the fact that the spermatic artery divides when it reaches this organ, and the vessels of the epididymis are smaller and more tortuous than those of the testicle and vas proper, the blood-current therefore being slower, which with inherited taint would favor the deposition, growth and reproduction of tubercle bacilli floating in the general circulation.

It has been established by Orth and others that tubercle bacilli can easily penetrate the mucous membrane without leaving any trace. R. C. Rosenberger has demonstrated bacilli in the blood and believes that they appear in this medium at a very early period. In the intestines they insinuate themselves between the epithelial cells like the chyle and are carried to any part of the body or fall a prey to the polynuclear leukocytes. This absorption from the mucous membrane of the intestine undoubtedly plays an important part in tuberculous infection in the child.

My investigations have led me to believe that primary tuberculosis of the prostate and seminal vesicles in children is rare. It is usually considered to be secondary to lesions in the kidney or epididymis. Although there are apparently a few exceptions, I can best illustrate this by a specific instance:

Case 1.—Boy, aged 20 months, was brought to the office June 6, 1904, for circumcision. The mother stated that she had had considerable trouble keeping the baby dry for the last four or five months. Some time before the baby had been fretful, did not nurse, slept little and weighed 3 pounds less than when 17 months old. The child had never been considered healthy. The mother was tuberculous. Examination of patient showed a thin, poorly nourished child. There was considerable excoriation of the skin over the scrotum and inner side of thigh and a long redundant prepuce that could be easily retracted. The meatus was edematous and almost white. During the examination the child passed urine which seemed to be loaded with phosphates. Some of this deposit was collected from the napkin and examined microscopically and found to contain pus. No enlargement of the lymph-nodes could be found. Liver and spleen were enlarged, kidneys could not be palpated. Temperature 100.

A urinary examination was made, June 7, and found to contain pus, blood and tubercle bacilli. The same day the child was catheterized and a guinea-pig inoculated, which was found to be tuberculous five weeks afterward. On rectal examination a large, hard, lumpy mass was found in the region of the prostate and vesicles on the left side. It was difficult to say whether or not this condition extended over to the right side.

On July 11, when the guinea-pig was posted and a definite diagnosis of urinary tuberculosis was made, the child was put on supportive treatment, but the symptoms gradually became exaggerated and the patient died September 25, 1904.

Owing to the objections of the mother I was able to make only a partial necropsy. The chest cavity was found normal. The abdominal cavity and mesenteric lymph-nodes were enlarged, soft and caseous; the liver and spleen enlarged and contained many small nodules on the surface; kidneys normal.

On opening the pelvic cavity and dissecting up the bladder I found a large mass on the left side in the region of the vesicles, which on careful dissection was found to contain the vesicle and ampulla. On section it was found to be filled with caseous nodules and abscess cavities. Bladder negative.

Microscopic examination of this mass, section of liver and spleen, was made by the late Dr. Wilder, and the diagnosis returned to me was tuberculosis. The kidney was found normal.

Judging from this case one would feel that the anatomic evolution of seminal tuberculosis in a child is about the same as that noted in the adult. The only difference is that the Koch bacilli seem to develop more rapidly in an undeveloped organ which, having a feeble blood-supply, cannot resist the infection. Also combative phagocytic power of the cells is less pronounced than after growth has been attained.

As a child cannot interpret its symptoms, rectal examination is necessary for a satisfactory knowledge of the existing condition in the vesicle. The base of the bladder and prostate are easily outlined and any change in form and consistency is readily made out. The source of tuberculous infection is of course the tubercle bacilli, from the tuberculous man or animal.

There are five theories as to the portals of entry into the body: (1) that tuberculosis is always intra-uterine in origin, due to placental infection; (2) that infection takes place from the inhalation of dried tuberculous sputum or fine, moist droplets expelled by coughing; (3) that the source of infection is through the gastro-intestinal tract; (4) that the source of infection is through the urethra, and (5) that infection occurs by metastasis.

As to the first or congenital theory, in the investigation of any case of tuberculosis in a child, the family history is important regarding tuberculosis as well as the history of definite exposure to infection. It is the custom in some places to ridicule the idea of heredity predisposing the offspring to tuberculosis, even if this transmission of the disease from parent to child is not admitted. Certainly it may be said that the child of tuberculous parents will have a predisposition to the disease.

It is quite true that these children may be infected from some other person who has consumption, or through the medium of milk, but this will not explain the cases found in the first few days of life. If there has been tuberculosis in the parents, then the child in adverse circumstances will almost certainly be more liable to contract the disease on exposure to infection than a child whose family history is not marred by the presence of tuberculosis. In other words, if two children of the same age were taken, one with a family history of tuberculosis, the other with no such history, and if these children living under the same environments became exposed, most certainly the child with a tuberculous taint would be the first to contract the disease.

The frequent localization of the tuberculous lesions among children in parts of the body not readily exposed to external infection must be regarded as congenital. Proof of metastatic infection through the blood may be made by microscopic examination, which would show an obliterated blood-vessel in the center of the tuberculous focus. Such pathologic examinations of the lesion may explain the cause of some localized foci of tuberculosis, but we would have a comfortable number of lesions left in which we could not explain the origin.

It is probable that the most common portals of entry are the nasopharynx, tonsils, lungs and intestines, for corresponding to these portals of entry we find primary infection of the cervical, bronchial, and mesenteric lymph-nodes. In many instances these lymph-nodes are primarily effected, the genital lesion being secondary. The difficulty is as to how the infection is to be diagnosed, as in many cases in which the bronchial and mesenteric lymph-nodes are involved the diagnosis would be purely hypothetical. It is a well-known fact that tuberculosis of childhood is essentially a disease of the lymph-vessels, usually represented by a chronic adenitis, and were it not for the fact that Nature has provided the infant with a lymph system of wonderful defensive power, they would all contract tuberculosis, for the infant is more exposed to house infection than any other member of the family—from kisses of a tuberculous person, dirty handkerchiefs and contaminated objects which they carry to their mouths, such as dirt under the finger-nails, which frequently contain tubercle bacilli. All these factors favor the introduction of germs into the digestive tract. The frequency with which the mesenteric lymph-nodes are found involved in infants rather favors the intestine as a more frequent portal of entry.

The entrance of the tubercle bacilli through the urethra must be very rare. It is asserted by some writers that the tubercle bacilli, being devoid of motion, must rely on the circulating currents for its transportation; besides, they are unable to develop in the secretions and are therefore powerless to resist the secretory currents. Nevertheless, urologists are all familiar with the clinical fact that foreign bodies when introduced into the urethra have a tendency to be carried by the mucous currents in the direction of the bladder, and it is reasonable to assume that micro-organisms lodged in the meatus are conveyed in a similar manner along the urethral tract, but unless they become arrested on a soil favorable for their growth they produce no symptoms. But should primary tuberculosis of the urethral tract take place, it would do so only at a point where the mucous membrane has been prepared for their reception by some antecedent injury or disease.

The fact is, the history of tuberculosis in childhood is against any one exclusive portal of entry; but if one clinical fact is as good as another, it is evident that there are several points through which the invasion may take place, and also that when once implanted in the genital tract, advance may be made in more than one direction.

The onset of the disease may be sudden or gradual, and varies with the presence or absence of mixed infection. The truth may be that primary tuberculosis confined to the genital organs of children causes no symptoms, and these children are seldom seen by the doctor for this condition.

The second case I wish to report falls into this class:

Case 2.—Boy, aged 7 months, seen Sept. 3, 1908. About three or four weeks before, the mother first noticed swelling in the left side of the scrotum. This had gradually increased in size but had caused no pain or other symptoms referable to it. The mother had come to Colorado for tuberculosis three years before. There were no other points of interest.

Examination.—General nourishment good. Scrotum presented on left side an ovoid mass about the size of a walnut; several nodules could be felt along the outer side of the mass. On the inner side, high up, a soft mass appeared, surrounded by a hard, fibrous ring. This was thought to be the testicle proper. The spermatic cord was apparently not involved. Rectal examination showed the prostate and seminal vesicles to be normal, as was the opposite testicle. Diagnosis of tuberculosis of the epididymis was made and operation advised, but was refused by parents. The child was seen at odd times until Nov. 25, 1908, when there appeared a softened area in the lower part of the mass. No other changes could be noted. After some time I gained permission of the parents to open this soft area. A considerable amount of thick, caseous material was found. This was diluted with distilled sterile water and guinea-pigs inoculated, which proved positive to tuberculosis when killed in five weeks. Guinea-pigs inoculated with urine at same time were negative. The cavity was packed with iodoform gauze a few times and then let alone, owing to the difficulty of keeping dressings in place. The mass gradually diminished in size, however, the fistula remained open for some months. When the patient was last seen, March 28, 1913, he was in perfect health, the only evidence of his testicular trouble being a rather thick fibrous cord running from the site of incision in the skin to the globus minor.

Tuberculosis of the genital organs is more frequently found in the post-mortem room in children who have died of other diseases. The gradual onset is much more common, as the disease develops painlessly and insidiously. Attention of the mother is usually first attracted by the presence of a swelling of the testicle. This may be first noticed when a complicating hydrocele develops, as this rather sudden accumulation of fluid would more likely attract the mother's attention. Hydrocele is rarely large when due to tuberculosis in the epididymis, and there is very little difficulty in making a diagnosis. In some cases, however, the child is not brought for treatment until caseation has taken place, and attention is first drawn to a discoloration on the scrotum, the swelling being only slightly tender. The following case will illustrate this point:

Case 3.—In A. J. S., aged 16 months, seen March 20, 1908. Swelling and hardness of the scrotum were noticed two or three months before. A physician was consulted, who advised hot applications.

A few days ago the mother noticed that the swelling was rapidly increasing in size and I was asked to see the case.

The mother's father and one brother had died of tuberculosis. The mother had been sent to Colorado for suspected tuberculosis. The general health of the child had been good; it never had been sick before and there was no history of injury.

Examination.—Left scrotum very large, owing to complicating hydrocele. An apparently somewhat enlarged mass was found below and behind the fluid sac. Rectal examination was negative, also the right testicle and epididymis. [illegible] 22 the hydrocele was tapped and 40 c.c. of a cl ing. In my two cases, the disease was on the left side. There was no history of traumatism, but in both cases a family history of tuberculosis, and whether or not we are justified in attributing the more frequent occurrence on the left side to some difference in the return of the venous blood-supply, the same as the frequency of varicocele on the left side, remains to be proved.

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Owing to the objections of the mother I was able to make only a partial necropsy. The chest cavity was found normal. The abdominal cavity and mesenteric lymph-nodes were enlarged, soft and caseous; the liver and spleen enlarged and contained many small nodules on the surface; kidneys normal.

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Microscopic examination of this mass, section of liver and spleen, was made by the late Dr. Wilder, and the diagnosis returned to me was tuberculosis. The kidney was found normal.

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It is quite true that these children may be infected from some other person who has consumption, or through the medium of milk, but this will not explain the cases found in the first few days of life. If there has been tuberculosis in the parents, then the child in removed, as well as the iliac lymph-nodes. The patient is still alive and has had no recurrence.

Case 2.—M. D., aged 24, single, farmer, was admitted to Douglas County Hospital Jan. 1, 1913. Family history is negative; personal history is also negative except for the following: The patient was thrown on the horn of a saddle six years ago and injured the right testicle. The organ enlarged, later became hard and caused a dragging pain. He says a hernia appeared last June, which caused him a great deal of trouble. Three years ago he fell over a piece of timber and hurt himself in the region of the stomach, but noticed no discomfort from it later.

Three months ago he sprained his back in lifting a sack of wheat into a wagon-box, and three days later he rode a horse and noticed that his abdomen was painful. At first they were cramp-like pains. The pain increased and the abdomen became hard and tender. It has gradually increased in size from the time of the sprain. Appetite has been poor for the last month and eating caused cramps. Bowels have been irregular and difficult to move.

Genito-Urinary: Did not have to get up at night before injury, nor was there pain or burning; but since being hurt he has had pain, burning and difficulty in urination. Sometimes has to be catheterized.

Hospital records from January 1 to January 5 show that the patient had a tense abdomen, complained of pain after eating, was restless, had severe pain in abdomen and back not related to eating, and rested only under the influence of morphin. During this time his temperature ranged between 96.6 and 100.6 F., respiration 20 to 26 and pulse from 86 to 120.

Operation.—On January 5 he was operated on, the right testicle being removed and the abdominal mass drained. Subsequent to the operation there was great increase in the rate of the heart; later the pulse, temperature and respiration were between the limits given above. There was considerable postoperative hemorrhage and discharge of sanguineous material and cell detritus through the drain, but the patient rested fairly well and on January 12 complained of no pain. On the night of January 13 he complained of severe pain in the left ear, and on January 15 there was a discharge of a large amount of watery fluid. At 4 p. m. there was about 20 ounces of dark-green emesis. At 8 p. m. the pulse became weak; later the pulse and respiration began to fail, and patient died at 11 p. m.

Necropsy.—The findings have no bearing on the tumor, except the following:

Liver much enlarged, adherent to diaphragm in entire extent of contact. Greater part of liver substance is replaced by a reddish-gray, purulent fluid resembling anchovy sauce. Weight about 1,500 gm. (does not include fluid; Orth gives the weight of the liver for adults as varying from 1,000 to 2,000 gm). Adhesions between transverse colon and stomach. Colon bound down in entire extent by adhesions.

Tumor, in upper abdomen, and apparently retroperitoneal. There is a large mass to which the small and large intestines are adherent. This mass contains a large amount of semifluid, chocolate-brown substance like anchovy sauce, in which are curd-like masses. The fluid is very abundant and spurts forth actively as the incision is made into the degenerated tumor mass.

Right testicle previously removed. Left apparently normal. Weight plus epididymis and appendages, 37 gm.

Lungs large, no adhesions; some anthracosis; some discolorized areas; anemia; some edema. Some areas cut with normal elasticity, but greater part of lung tissue is replaced by areas of same material as in the tumor and liver. In the upper right lobe an area of tuberculous appearance is found; cut across it is gritty to the knife.

Heart normal. Shape normal. Color slightly anemic. Consistency rather firm.

Lymph-nodes of neck filled with same pus-like material as found elsewhere.

Microscopic.—Liver: Accumulation of pigment, evidently both of hematogenous and hepatogenous origin, about the central vein and Glisson's capsule, especially the former. Some small round-cell infiltrations, especially about capsule. Marked congestion; increased connective tissue in capsule; general fatty degeneration. Area of metastasis: Areas of large round cells; much connective tissue, also congestion and some small round-cell infiltration. Area shows marked cystic degeneration.

Lungs: Emphysema; anthracosis slight; atelectasis, congestion, some blood pigment, some small round-cell infiltration, especially beneath pleura. Area of calcification: Tuberculous nodule surrounded by connective tissue, and small round-cell infiltration marked.

Tumor: Mixed type, no regularity in formation of tissue cells; there are spindle-cells, some small round cells, and a few large round cells, all probably of connective tissue origin. Pus cells are numerous and there is much degeneration and necrosis so that the blood-vessels are not apparent. There are cell nests composed of cells epithelial in character.

Right testicle: Some parenchymatous degeneration; slight increase in connective tissue; marked congestion.

Left testicle: Shows areas of round-cell infiltration; large amounts of free blood; lymph stroma contains alveolar areas of epiblastic tissue and areas resembling the corium, showing syncytial cells with Langhan's cells and areas of cartilage.

These two cases present many points of interest. In the first there was no sign of metastases except those referred directly to the testicle. The cord was not enlarged to any extent and the entire tumor seemed to be local. We made an incision extending from the symphysis pubis to the anterior superior spine and removed the testicle, the cord, the retroperitoneal fat and the cord around the pubis with all its veins and tributary blood-vessels and lymph-nodes that we could find nearly to the prostate.

The patient made an uninterrupted recovery and is still living, two and a half years after the above.

The second case was seen late in its history. With the distended abdomen and the tuberculous family history, the intern in the hospital made a diagnosis of tuberculous peritonitis with the possibility of a tuberculous epididymis. The patient was anesthetized and the abdomen opened only to find the peritoneal cavity empty and the mass entirely retroperitoneal with liver metastases. The mass was a soft, bloody, grumous looking material resembling anchovy sauce. The testicle was removed. In three days the patient died, and at the post-mortem specimens were taken from the lungs, liver, thyroid, glands of the neck and kidneys, with the result enumerated before.

On microscopic study of the slides from these sections the diagnosis of mixed tumor of the testicle was made.

In the first case, after a careful study, we found the dominant cells to be epithelial, while in the second, at least in the metastatic growths, the dominant cell was of mesoblastic origin, with many epiblastic cells as well as mesoblastic in the testicle itself.

A complete review of the literature and theories of these tumors and their origin would carry us too far into the field of pathology for this paper, and we can only call attention to the recent papers of Ewing[1] and of Wilson.[2] Ewing has given us such a masterly review of the subject that little remains to be said regarding these peculiar tumors.

Our cases are, in our judgment, both of embryologic origin, as evidenced by the presence of syncytium and the cells of Langhans, the increased amount of muscle and the presence of cartilage, the large embryonal epiblastic cells arranging themselves in an alveolar form, the prescolored fluid removed. This fluid was not examined. After removing the hydrocele fluid it was possible to make out a hard indurated epididymis. The testicle did not seem to be involved, as it was possible to make out the line of demarcation between the testicle and the epididymis. The vaginalis process was closed and the vas was apparently uninvolved. Diagnosis of tuberculosis was made, but operation refused. March 29 there was no change except a slight reaccumulation of hydrocele fluid. April 30, after a few days' application of heat, which had been advised by the previous medical attendant, the child became fretful and cross. An area of redness appeared over the lower part of the indurated mass. After doubly assuring the father that this area contained pus, I was allowed to open and drain this softened area and a teaspoonful of pus was removed. The cavity was then packed with iodoform gauze. The child was seen the next day and the gauze removed and the cavity repacked. May 3, the previous packing had been removed the day before and it was impossible to reinsert the gauze. Nothing more was done to the fistula other than keep it clean. June 17 another soft area appeared on the upper and outer side of the scrotum. The fistula below was still discharging a small amount of pus. This was opened and drained and treated as the previous abscess had been. The pus was examined for tubercle bacilli but none could be found. The fistula remained open for many weeks but finally closed.

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[1] Ewing: Surg., Gynec. and Obst., October, 1910.
[2] Wilson: Ann. Surg., April, 1913.

When this patient was last seen, in May, 1912, he was in good health and the testicle appeared normal. A small, firm band was found running from the scar on the scrotum to a rather small hard nodule in the epididymis. The tuberculous process had here been arrested and encapsulated.

Acute tuberculosis of the epididymis and testes is rare, and begins like gonorrheal epididymitis, suddenly and with acute symptoms. There is pain on palpation, the scrotum is edematous, with effusion into the tunica vaginalis, and the testicle enlarges to two or three times its natural size.

In most of these cases it is quite probable that some previously existing tuberculous nodules in the organ were present and not noticed by the mother. Abscess formation is quite rapid, and the pus may find its way to the surface and break externally, or burrow into the testes proper. A portion or all of this organ may be destroyed if the disease was primarily in the epididymis.

I have seen similar cases in the adult in which the patient would come down with a sharp, acute epididymitis on one side after severe exercise, and on examination of the other epididymis, prostate, and vesicles, find tuberculous nodules that had never been noticed by the patient.

In the case in which the prostate and seminal vesicles were found infected, frequent urination was the first symptom noticed by the mother, but as the case progressed the irritability became so marked that the patient was unable to retain his urine more than twenty to thirty minutes at a time. Tenesmus and pain became very severe toward the last in this case, for this little fellow had a crying spell after each urination.

The two patients with infection of the epididymis appeared to be in perfect general health, and nothing could be found suggestive of tuberculosis in any other organs of the body; but the patient with infection of the prostate and vesicles presented a typical tuberculosis appearance. There was loss of weight and strength, the temperature fluctuating between 99 and 101.

In the differential diagnosis, congenital syphilitic orchitis is the most common and the most difficult disease of the testes to exclude. The chief points in the diagnosis are the presence of other signs of congenital syphilis and the therapeutic test. The body of the testes is usually affected in the majority of cases as a diffused enlargement, but gumma may occur in the epididymis. The cord is rarely thickened; the prostate and vesicles never. Syphilis is almost always painless. A Wassermann reaction may be negative, but it may be possible for a syphilitic child to have a tuberculous testicle.

Sarcoma is the next frequent disease likely to attack the testicles in children, but it can usually be recognized by the rapidity with which the testicle increases in size without pain, softening or inflammatory symptoms. The cord is often enlarged, but the swelling is smooth and even. The lymph-nodes above and below Poupart's ligament may be involved early, but clinically, from the standpoint of treatment, they may be considered as one.

Hydrocele usually presents no difficulty of diagnosis. It should be remembered, however, that this condition is often a part of the tuberculosis of the testes and epididymis.

Benign tumors of the testicles, such as enchondroma, myoma, adenoma, etc., are of such rare occurrence that they need not be considered in the differential diagnosis.

The prognosis in primary tuberculosis of the genitals in children is usually favorable. Even when secondary infection has taken place and the abscess cavity opens externally, encapsulation takes place and a portion of the glandular structure is preserved. In fact, there seems to be a limitation of the tuberculous process in all organs of children, the one notable exception being tuberculous meningitis.

For the true conception of these cases, it is of importance to know that tuberculosis of these organs remains almost always the only tuberculous focus in the body; differing from later periods of life when it is frequently secondary to other tuberculous processes in the genito-urinary tract. Therefore operation may produce permanent cure, although this is not always certain.

In spite of the result obtained in these two cases, I should always advise operation.

Metropolitan Building.

THE PROBABLE EMBRYOLOGIC ORIGIN OF MIXED TUMORS OF THE TESTICLE *

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OMAHA

In presenting this paper I do not hope to add any new facts to those already accessible, only to bear witness to the position taken in the literature regarding the pathology and probable origin of mixed testicular tumors. In the last two years I have met with two cases of tumor of the testicle worthy of attention.

Case 1.—O. M., waiter, colored, aged 29, was seen early in 1911. He gave a negative family and personal history, especially in regard to new growths. As seems to be the usual thing in these cases, he gave a history of an injury to the testicle at the age of 12 years, but had no trouble to speak of till about ten months before we saw him. He did say that he had had dull pain in this testicle at times for ten years previously, and that the testicle seemed larger than the other. During the three months before coming to us it became much larger and more painful. The testicle was removed, as well as the iliac lymph-nodes. The patient is still alive and has had no recurrence.

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

Case 2.—M. D., aged 24, single, farmer, was admitted to Douglas County Hospital Jan. 1, 1913. Family history is negative; personal history is also negative except for the following: The patient was thrown on the horn of a saddle six years ago and injured the right testicle. The organ enlarged, later became hard and caused a dragging pain. He says a hernia appeared last June, which caused him a great deal of trouble. Three years ago he fell over a piece of timber and hurt himself in the region of the stomach, but noticed no discomfort from it later.

Three months ago he sprained his back in lifting a sack of wheat into a wagon-box, and three days later he rode a horse and noticed that his abdomen was painful. At first they were cramp-like pains. The pain increased and the abdomen became hard and tender. It has gradually increased in size from the time of the sprain. Appetite has been poor for the last month and eating caused cramps. Bowels have been irregular and difficult to move.

Genito-Urinary: Did not have to get up at night before injury, nor was there pain or burning; but since being hurt he has had pain, burning and difficulty in urination. Sometimes has to be catheterized.

Hospital records from January 1 to January 5 show that the patient had a tense abdomen, complained of pain after eating, was restless, had severe pain in abdomen and back not related to eating, and rested only under the influence of morphin. During this time his temperature ranged between 96.6 and 100.6 F., respiration 20 to 26 and pulse from 86 to 120.

Operation.—On January 5 he was operated on, the right testicle being removed and the abdominal mass drained. Subsequent to the operation there was great increase in the rate of the heart; later the pulse, temperature and respiration were between the limits given above. There was considerable postoperative hemorrhage and discharge of sanguineous material and cell detritus through the drain, but the patient rested fairly well and on January 12 complained of no pain. On the night of January 13 he complained of severe pain in the left ear, and on January 15 there was a discharge of a large amount of watery fluid. At 4 p. m. there was about 20 ounces of dark-green emesis. At 8 p. m. the pulse became weak; later the pulse and respiration began to fail, and patient died at 11 p. m.

Necropsy.—The findings have no bearing on the tumor, except the following:

Liver much enlarged, adherent to diaphragm in entire extent of contact. Greater part of liver substance is replaced by a reddish-gray, purulent fluid resembling anchovy sauce. Weight about 1,500 gm. (does not include fluid; Orth gives the weight of the liver for adults as varying from 1,000 to 2,000 gm). Adhesions between transverse colon and stomach. Colon bound down in entire extent by adhesions.

Tumor, in upper abdomen, and apparently retroperitoneal. There is a large mass to which the small and large intestines are adherent. This mass contains a large amount of semifluid, chocolate-brown substance like anchovy sauce, in which are curd-like masses. The fluid is very abundant and spurts forth actively as the incision is made into the degenerated tumor mass.

Right testicle previously removed. Left apparently normal. Weight plus epididymis and appendages, 37 gm.

Lungs large, no adhesions; some anthracosis; some discolorized areas; anemia; some edema. Some areas cut with normal elasticity, but greater part of lung tissue is replaced by areas of same material as in the tumor and liver. In the upper right lobe an area of tuberculous appearance is found; cut across it is gritty to the knife.

Heart normal. Shape normal. Color slightly anemic. Consistency rather firm.

Lymph-nodes of neck filled with same pus-like material as found elsewhere.

Microscopic.—Liver: Accumulation of pigment, evidently both of hematogenous and hepatogenous origin, about the central vein and Glisson's capsule, especially the former. Some small round-cell infiltrations, especially about capsule. Marked congestion; increased connective tissue in capsule; general fatty degeneration. Area of metastasis: Areas of large round cells; much connective tissue, also congestion and some small round-cell infiltration. Area shows marked cystic degeneration.

Lungs: Emphysema; anthracosis slight; atelectasis, congestion, some blood pigment, some small round-cell infiltration, especially beneath pleura. Area of calcification: Tuberculous nodule surrounded by connective tissue, and small round-cell infiltration marked.

Tumor: Mixed type, no regularity in formation of tissue cells; there are spindle-cells, some small round cells, and a few large round cells, all probably of connective tissue origin. Pus cells are numerous and there is much degeneration and necrosis so that the blood-vessels are not apparent. There are cell nests composed of cells epithelial in character.

Right testicle: Some parenchymatous degeneration; slight increase in connective tissue; marked congestion.

Left testicle: Shows areas of round-cell infiltration; large amounts of free blood; lymph stroma contains alveolar areas of epiblastic tissue and areas resembling the corium, showing syncytial cells with Langhan's cells and areas of cartilage.

These two cases present many points of interest. In the first there was no sign of metastases except those referred directly to the testicle. The cord was not enlarged to any extent and the entire tumor seemed to be local. We made an incision extending from the symphysis pubis to the anterior superior spine and removed the testicle, the cord, the retroperitoneal fat and the cord around the pubis with all its veins and tributary blood-vessels and lymph-nodes that we could find nearly to the prostate.

The patient made an uninterrupted recovery and is still living, two and a half years after the above.

The second case was seen late in its history. With the distended abdomen and the tuberculous family history, the intern in the hospital made a diagnosis of tuberculous peritonitis with the possibility of a tuberculous epididymis. The patient was anesthetized and the abdomen opened only to find the peritoneal cavity empty and the mass entirely retroperitoneal with liver metastases. The mass was a soft, bloody, grumous looking material resembling anchovy sauce. The testicle was removed. In three days the patient died, and at the post-mortem specimens were taken from the lungs, liver, thyroid, glands of the neck and kidneys, with the result enumerated before.

On microscopic study of the slides from these sections the diagnosis of mixed tumor of the testicle was made.

In the first case, after a careful study, we found the dominant cells to be epithelial, while in the second, at least in the metastatic growths, the dominant cell was of mesoblastic origin, with many epiblastic cells as well as mesoblastic in the testicle itself.

A complete review of the literature and theories of these tumors and their origin would carry us too far into the field of pathology for this paper, and we can only call attention to the recent papers of Ewing[1] and of Wilson.[2] Ewing has given us such a masterly review of the subject that little remains to be said regarding these peculiar tumors.

Our cases are, in our judgment, both of embryologic origin, as evidenced by the presence of syncytium and the cells of Langhans, the increased amount of muscle and the presence of cartilage, the large embryonal epiblastic cells arranging themselves in an alveolar form, the presence of large round cells, degenerating epiblast and chromogenetic cells.

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[1] Ewing: Surg., Gynec. and Obst., October, 1910.
[2] Wilson: Ann. Surg., April, 1913.

As to the probable origin of these tumors, the first case seemed definitely to arise from the tubules of the testicle, or, at least, the tubules presented the microscopic appearance of infiltrating the lower layers of the tissue in their proximity. This tumor would, therefore, be readily classified as a carcinoma on superficial examination.

A microscopic study of the second tumor offered no evidence regarding its origin. The last would undoubtedly fall under the theory of Ewing, that these tumors arise in the sex cells of the testicle; the first did not appear to me to be nearly so indefinite in its origin.

Once again the conclusions of Ewing and the added ideas of Wilson may be quoted, as follows:

> 1. Pure fibromas and pure leiomyomas of the testis exist but are extremely rare, as is also adenoma occurring in atrophic undescended testes.
>
> 2. Primary lymphosarcoma and pure spindle-celled sarcoma are of uncertain origin.
>
> 3. Chondroma, myxoma, lipoma, rhabdomyoma and carcinoma have not been shown to exist apart from a teratomatous origin.
>
> 4. Alveolar large round-celled, perivascular and other forms of so-called sarcoma testis are of epithelial and teratomatous origin.
>
> 5. The commonest tumor of the testis is an embryonal carcinoma, alveolar or diffuse, with polyhedral or round cells and often with lymphoid stroma. These tumors are probably one-sided developments of teratomas.
>
> 6. Teratoma testes arise from sex cells in the neighborhood of the rete, whose normal development into spermatogonia has been suppressed but whose potencies remain intact and ready to express themselves in the various forms of simple or complex teratomas.

Wilson's application of the theories of Blanca and Bresseto would also further tend to prove the hypothesis of Ewing, that these tumors are of sex cell origin, and are teratomas.

We believe we are justified in concluding that these two cases fall under the classification of teratomas. We note that Wilson reports six of the nineteen cases as having had previous injury. Both of our cases reported injury.

From a clinical standpoint the question comes: What is to be done with tumors of the testicle? From the evidence gathered from recent studies it would seem that tumors of the testicle, like those of the breast and parotid, are at least frequently malignant.

Given a history of trauma some years previously, with a testicle slowly increasing in size, accompanied by rather indefinite pains, continued for several months, one is justified in removing the testicle for malignancy. Some may take issue with this position, but we believe that were this done many lives would be spared, and perhaps a few benign tumors removed. Our two cases illustrate also the two extremes of duration; in one case the tumor was attacked early, and in the other late. Just at what period in the histories of these cases metastasis takes place is not clear. In general it is early, we believe. The simple removal of the testicle is, in our judgment, not indicated, even if a malignant tumor is suspected; rather the removal of the entire cord, the retroperitoneal glands along the cord and as far as possible along the iliac veins, for evidently metastasis takes place frequently along this channel as indicated by the formation of retroperitoneal masses, as the late results of these tumors frequently show. Clinically it is important to recognize them as early as possible and to do a radical operation on them.

503 Brandeis Building.

OPERATIVE TREATMENT OF GENITAL TUBERCULOSIS

INDICATIONS AND TECHNIC *

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AND
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Most of us probably hark back to the old terminology under which we were brought up which regarded genito-urinary tuberculosis as a variety of starfish beginning in the bladder and radiating more or less completely in all directions. Certain remnants of this teaching still exist, and though tuberculosis of the kidney is now generally recognized as a primary lesion for the urinary tract, it is too little recognized that the genital tract also has its primary focus of infection. The term "genito-urinary tuberculosis" should be abandoned and we should come to recognize tuberculosis of the urinary tract as primary in the kidney, while tuberculosis of the *genital tract in the male is primary in the epididymis.* The bladder and the structures of the bladder neck, including the prostate, are more or less common to both genital and urinary tracts, and the prostate is therefore between two fires and may be infected with tuberculosis as a secondary matter either in urinary or in genital tuberculosis. It is important, however, to recognize that the infection of the prostate is rarely primary for the genital tract, and as our knowledge of this matter extends we incline to think that primary prostatic tuberculosis will be relegated to the same class of surgical curiosities as is primary tuberculosis of the bladder.

Our knowledge of infections of the genital tract have been crystallized by the excellent work of Belfield. Perhaps his most important contribution has been in calling attention to the excretory function still maintained by the genital duct. It will be recalled that the epididymis is the remnant of the old middle kidney, and in its rudimentary excretory capacity it picks up microorganisms from the circulation in a manner entirely similar to that of the kidney. Since the prostate has no such function it is easy to comprehend why it is so rarely infected as a primary matter, though its position makes it easy to recognize the probability of its secondary involvement. One of us (J. D. B.) has shown in a recent paper[1] that the presence of primary prostatic tuberculosis is asserted in only 6 per cent. of a large collection of well-studied cases.

The relation of the testicle to genital tuberculosis is also of paramount importance. Its proximity to the epididymis makes its secondary involvement an exceedingly easy matter, and this complicates our opinion as to the relation between the epididymis and the testicle in regard to primary involvement. It is our firm opinion, based on a considerable clinical observation, that primary involvement of the testicle is rare; but we are free to admit that it was involved to some extent in the process in over 40 per cent. of our cases of tuberculosis of the epididymis. Our opinion is therefore based on the character of the process in the testicle, which appeared to be more recent and less extensive than that in the epididymis. This question is of importance as bearing on the attitude we should take in regard to removal of the testicle in tuberculosis of the genital tract, and also in regard to the importance of early operation on the tuberculous epididymis if we are to save the testicle from infection. It is only a comparatively short time since the operation of orchidectomy was regarded by the highest authorities as the operation of election for these conditions. Sound opinion has, we believe, entirely reversed this decision, but its stamp still remains on the surgical world and it is no rarity to see orchidectomy done when the involvement of the testicle by no means warrants it.

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Barney, J. Dellinger: Med. and Surg. Jour., Boston, July 3, 1913.

That the process reaches the prostate in a large number of the cases of genital tuberculosis has recently been shown by one of us (J. D. B.)[1] in an analysis of 101 cases from our clinic, where it was clinically present in 75 per cent. A more searching examination of these cases shows that 30 per cent. are involved in the first six months of the disease and 54 per cent. in the first year. The route by which the infection reaches the prostate is not yet clearly understood. Examination of the vas shows progressive involvement from below upward, but in few, if any, of the cases is the involvement sufficient to justify the belief that the involvement of the prostate takes place by continuity of the process. It seems fairly clear that the infection must extend by blood-stream or lymph-vessels, and we incline to the view that the lymphatic route is more common than has been generally believed.

Briefly restated, the clinical pathology of genital tuberculosis is as follows: The disease is primary in the epididymis, occasionally in the testicle, rarely in the prostate. The prostate is involved secondarily early in the disease and ultimately in a vast majority of the cases. The testicle is involved secondarily less often than the prostate and probably less early. It is of the first importance to recognize the distinction between primary and secondary involvement. The organs primarily involved show very little tendency to shake off the disease, while those in which it is secondary show a far greater power in this direction and will under favorable conditions be successful. On these facts we shall undertake to support our main thesis that the operation of election in genital tuberculosis is epididymectomy, including the accessible portion of the vas.

It has become a generally accepted doctrine when dealing with tuberculous processes elsewhere in the body that it is wise to remove by operation massive foci and to trust to the tissues the jugulation of the remaining tuberculosis. This principle applied to the urinary tract requires nephrectomy with removal of the accessible portion of the ureter, and it is generally recognized that the secondary processes in the remaining portion of the ureter and in the bladder heal in a majority of cases. Precisely the same principles should be applied to genital tuberculosis. The primary focus, the epididymis, should be dealt with radically. The secondary foci in the testicle may be dealt with locally and the secondary process in the prostate should be left to Nature. The last statement requires some explanation. If we advise dealing locally with the process in the testicle why not give the same advice in regard to the prostate? The difference depends on its anatomic location. To attack the tuberculous prostate is a radical procedure. The complete removal of the process when not under guidance of the eye is practically out of the question. We are far more likely to simply kick a hornet's nest and leave the patient worse off than when he started. In spite of some evidence to the contrary, we have been unwilling to attempt operative measures on the tuberculous prostate.

The management of the process in the testicle requires some further discussion. It has been our experience that the involvement of the testicle was in most cases contiguous to the process in the epididymis. Often only a small focus in one pole is to be found. When this is the case we have been satisfied to eradicate roughly with the curet and have never seen reason to regret it. It is clear that the testicle offers a very much higher resistance to the process than that offered by the epididymis. Cases will occasionally be seen, however, in which the involvement of the testicle is so considerable that it cannot be regarded as a harmless process; in these, though few, we must recommend orchidectomy.

We have held views somewhat at variance with generally accepted doctrines in regard to our duty toward the vas, and therefore feel required to give our reasons for the faith that is in us. We have insisted that it was desirable to remove the accessible portion of the vas for the reason that in years gone by we have too frequently seen recurrence in the stump of the vas when it was left in the neighborhood of the inguinal canal. Too often we have patients returned with scrotum perfectly healed and testicle apparently free from involvement, but with a troublesome mass in the groin or even a sinus, the healing of which required time, patience and tuberculin. We have therefore come to the opinion that the leaving of this portion of the vas complicates convalescence and may at times prove a serious annoyance. For these reasons we have recommended, and for five years one of us (H. C.) has practiced removal of the epididymis and removal of the vas up to a point at about the level of the brim of the true pelvis.

OPERATIVE TECHNIC

The local preparation of the patient should involve the skin of the scrotum and the groin of the corresponding side if the disease is unilateral. An incision is made over the epididymis about 2 inches long. If sinuses are present they should be circumscribed by the incision. This is carried down to and opens the tunica vaginalis, which will in many cases be found adherent to the testicle and must be separated by dissection. The testicle and epididymis are delivered from the wound. The epididymis is then separated from the testicle by a scissor dissection, as in this way the vessels which lie behind the epididymis are less likely to be destroyed. The separation should be begun at the upper pole and carried downward, the epididymis being separated from within outward. When it is free the lower inch or two of the vas should be stripped up by blunt dissection from the structures of the cord. A curved clamp is then applied to the vas and the epididymis and the lower inch or two of the vas cut away. The vas is then stripped up by blunt dissection with the fingers so as to free it from the structures of the cord up to the external inguinal ring. Guided by the finger, the clamp on the lower end of the vas is then passed up to the external ring and carefully inserted into the canal, care being taken to avoid pushing it in front to the canal between the fascia and the fat. The clamp is then pushed upward and outward, following the line of the inguinal canal until its tip lies directly beneath the fascia at the level of the internal inguinal ring. The handle of the clamp is then strongly depressed, bringing the point snugly against the skin. An incision not over half an inch in length is then made on the point of the clamp, which is then pushed out through this incision carrying with it the distal end of the vas (Fig. 1). The vas is then picked up, and traction is made so as to pull out the portion lying in the canal so that the remaining portion dives vertically into the wound and over the brim of the pelvis. The finger is then inserted into the little wound, as shown in Figure 2, and the vas is freed as far as the finger can reach, making steady traction during this process. A right-angled clamp is then applied to the vas at the lowest accessible point. It is divided, cauterized with phenol (carbolic acid) and dropped back. The wound in the groin is closed with one catgut suture and the fascia with a silkworm-gut titch in the skin. The operation is completed by the careful ligation of any bleeding points in the scrotum. Any apparent foci in the testicle are eradicated with a curet. The wound is painted with tincture of iodin and closed with a subcuticular suture of silkworm-gut, leaving a small protective tissue-drain at the lower angle. This drain has been found to shorten convalescence by giving free exit to the serum which necessarily oozes from the raw surface, the amount of which is considerably increased by the application of iodin. The dressing is held in place by the application of an Alexander bandage, one of the many devices of the late Samuel Alexander, which has been a boon to the genito-urinary surgeon. The drain can generally be removed in forty-eight hours and the patient may be up and about in two or three days. The after-treatment should include all of the general hygienic measures suitable for patients with tuberculosis, including the routine use of tuberculin and the routine use of sandalwood oil in cases in which there is involvement of the prostate.

The operation has seemed to us much superior to that involving a long incision through the scrotum and coverings of the inguinal canal in order to remove an equal amount of the vas. It takes less time in the doing, is equally efficient and shortens the convalescence about two-thirds.

87 Marlboro Street—374 Marlboro Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. STOKES, LYONS AND CABOT AND BARNEY

Dr. Louis E. Schmidt, Chicago: I am not in complete sympathy with the technic of Dr. Cabot. About ten years ago we had a tendency to remove as much of the vas as possible. Of late years there has been, I believe, an opposite tendency, and I have simply removed the epididymis and a short portion of the vas, and treated the vas in exactly the same manner as the Mayos treat the ureter; they inject a certain quantity of phenol (carbolic acid) and tie it off, and then cleanse the wound with saline solution. That has given good results. Naturally, if there is a question of the involvement of the vas, if nodules can be felt all along its course, the question will arise as to how far you should remove the vas, whether or not it should be removed high up close to the internal ring: in fact, if it is involved beyond that point, and particularly if the vesicles are involved, it is a question whether or not the removal of the vesicles should be undertaken. Formerly I was in the abit of removing them, and I have specimens to show both esticles removed, when they have been involved by tuberculosis, together with both cords and both seminal vesicles. They can be removed intact, that is, with an incision along the groin and then a perineal incision. So far as I am familiar with this topic at present, if the vesicles are involved, the prostate is also involved, and there is a greater tendency to leave these alone, particularly if the primary focus is in the epididymis; if the epididymis is removed there is a tendency to improvement, as in the kidney, and I think that we should leave the larger part of the ureter in rather than attempt to make a ureterectomy, even if we know that the ureter is involved.

Dr. Hugh Cabot, Boston: We have all seen patients known to have tumors in the scrotum who had been treated in some cases for months, and occasionally longer, under the belief that the change in the testicle might be due to syphilis. In that way I have, on at least two occasions, seen a tumor grow so rapidly that it was at least arguable that the patient's life was thrown away, and I do not believe that in the present state of our knowledge we are justified in observing these cases of unknown tumors involving the testicle. The Wassermann reaction may often exist, but assuming the Wassermann reaction to be negative, assuming that there is still doubt in our minds as to the possibility of the change in the testicle being gummatous, it is our duty to give the patient the benefit of the doubt and operate, and not sit back and make an attempt to cure him with antisyphilitic treatment. We shall probably never succeed in convincing the average practitioner of the truth of that statement. We must recognize the extreme malignancy of these tumors, the fact that, as we have been in the habit of managing them, the vast majority are not benefited by operation, that these patients die of involvement of the lymph-nodes, and that it is abundantly clear that we have not seen these cases early enough to be of substantial value to the patient. The remedy for that consists in enforcing the view that exploration in these cases is the method of giving the patient the benefit of the doubt and that the doubt should be removed by seeing exactly what is going on there.

I am not quite in agreement with Dr. Stokes in regard to what constitutes radical operation in these cases, because it must be remembered that the lymphatics of the testicle follow, at least to a considerable extent, the spermatic vessels, that the lymph-nodes in which metastasis takes place are those lying immediately below the kidney. If we are to make any considerable attempt at eradicating the glandular involvement we must make an incision which exposes the kidney. It has never seemed to me that this was worth while. I do not believe it to be possible to remove those glands in a way to be of benefit to the patient. The removal of the testicle, with the cord, at a point high up in the inguinal canal, is as much as we can do with advantage.

Dr. Arthur Dean Bevan, Chicago: In discussing any case of tuberculosis one should remember that almost all of these cases are secondary. Tuberculosis of the epididymis is a secondary affair almost invariably, just as is tuberculosis of the kidney in a certain sense, in that they are hematogenous infections and that there is almost invariably some primary lymphatic tuberculosis or tonsillar tuberculosis in the body; when you handle a case of surgical tuberculosis, whether of the urinary tract or of the genital tract, you are not removing anything except the grossly involved structures no matter how radically you operate. If one carries that in mind I think one must necessarily come to this conclusion, just as general surgeons do in handling tuberculosis of any part of the body, that in case you can remove a tuberculous focus, the overshadowing focus, by an operation that is justifiable and easily borne by the patient, it is a proper thing to do, because the patient then has a much better chance of cleaning up the remnants of the tuberculous process that always remain.

In genital tuberculosis the proper thing to do in the great majority of cases would be a simple operation; removal of the epididymis and that part of the vas that is also grossly involved. I hardly think that it is good routine to follow the vas down to the brim of the pelvis, unless the vas is greatly involved, and if it is involved so far down as that, one may be pretty sure that the seminal vesicles and prostate are also involved. If a minor operation, without any hardship to the patient, would clear up the focus, that should be done. When that is done, the patient should be given the general hygienic treatment that is given in cases of lung tuberculosis, and possibly, of course, tuberculin.

I never have cured permanently a single patient with malignant tumor of the testicle. If you have a suspicious tumor of the testicle and you do not know whether it is malignant or not, there is just one thing to do, and that is to make an exploratory incision. I have found that some of the growths that I supposed were malignant were nothing more than compound hydroceles with thick walls. I have found some of them to be gummas. The possibility of permanent cure in malignant disease of the testicle is so small that we are not warranted in removing suspicious tumors which may be benign. There is little danger in making an exploratory operation in malignant tumors. It is perfectly rational and scientific to take out a section of tissue, examine it with the greatest care, and then, if it is malignant, do a radical operation.

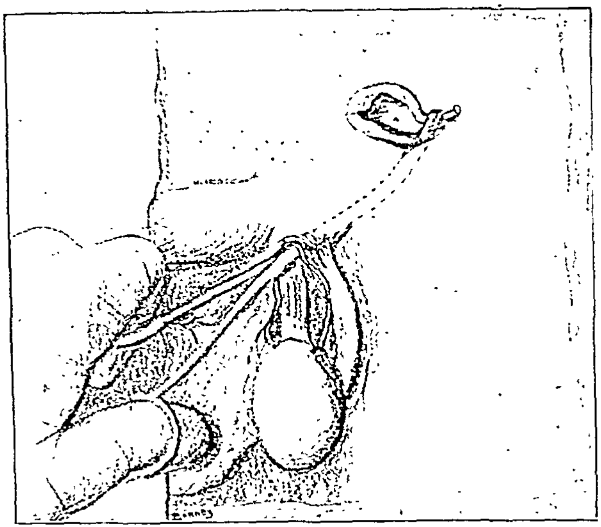

Fig. 1.—Vas held in curved clamp which has been passed up into the inguinal canal and is making its exit through a small incision opposite the internal inguinal ring.

Dr. V. D. Lespinasse, Chicago: I am heartily in accord with the operative technic which Dr. Cabot has described. I only wish to call attention to some of its difficulties. The first one of these is hemorrhage. I have had one or two cases in which it has been rather difficult to stop the hemorrhage from the testicle after the epididymis has been removed. Hemostasis must be done with a great deal of care, and it has been my practice, after I have stopped the bleeding, to put on a compression bandage at once. I should like to ask Dr. Cabot if, after treating the vas as he does and cutting it off down in the pelvis, he has ever had a transference to the pelvis of the mass that we sometimes get in the groin? It seems to me that this mass might possibly occur there and cause more trouble than if it occurred in the scrotum. It has been my practice to cut the vas off and inject it with phenol (carbolic acid).

Dr. Hugh H. Young, Baltimore: These tumors certainly are the most remarkable and bizarre type of tumors that we have. It seems to me that early operation is unquestionably the thing. I can remember a number of patients who have been treated unsuccessfully with iodid of potassium for months, and ultimately have come for operation when it was too late. It has been my habit to attack these tumors from above, that is, going in on the cord and dividing the veins and other structures of the cord high up, before there is any traumatism of the testicle, from which the veins might become infected, causing metastasis. In many cases of malignant disease it is important to get above the disease in order to prevent metastasis from traumatism and pressure at operation.

Dr. Cabot brought up a subject that has not been dealt with in a comprehensive way for several years. It seems that tuberculosis of the globus major of the epididymis is almost always primary and probably comes through the venous supply. The involvement of the second side generally occurs, just as a gonococcus infection occurs, in the globus minor, sometimes as a fulminating inflammation, with much pain, swelling, redness and tenderness, simulating a severe gonorrheal infection. It would seem to me, therefore, that, in some cases at least, when the second side becomes involved the disease has traveled up and involved the prostate and seminal vesicles and then gone down through the vas, involving the second side, just as the gonococcus does. Undoubtedly epididymectomy is the operation of choice and every effort should be made to preserve at least a portion of one testicle.

I had one case eight years ago in which I followed the vas far up into the groin and divided it at the pelvic brim. The patient had a tuberculous peritonitis afterward. That case has rather deterred me from following the vas so far. I usually follow the vas up to the groin and then inject iodoformized oil. It is generally possible to get from 15 to 20 c.c. of oil down into the vas deferens, and probably to fill the seminal vesicle and the posterior urethra with it. This method has been used in our clinic for years with good results. The trouble with the earlier operation was that it was too radical. The trouble with the operation through the perineum was that the urethra was invaded and a urinary fistula remained. I believe that if we do come to an operative treatment of these severe cases of tuberculosis of the prostate and seminal vesicles, it will be an operation possibly removing more or less completely the tuberculous seminal vesicles and the lateral lobes of the prostate, but not penetrating the urinary tract.

Dr. S. A. Mahoney, Holyoke, Mass.: Relative to Dr. Cabot's trouble in the region of the external inguinal ring when he has simply divided the vas deferens at the opening, I have had that same experience in a small number of cases. Patients have returned to me from one to two months after the scrotum and testicle have healed perfectly with a disagreeable swelling and inflammation in the region of the external ring.

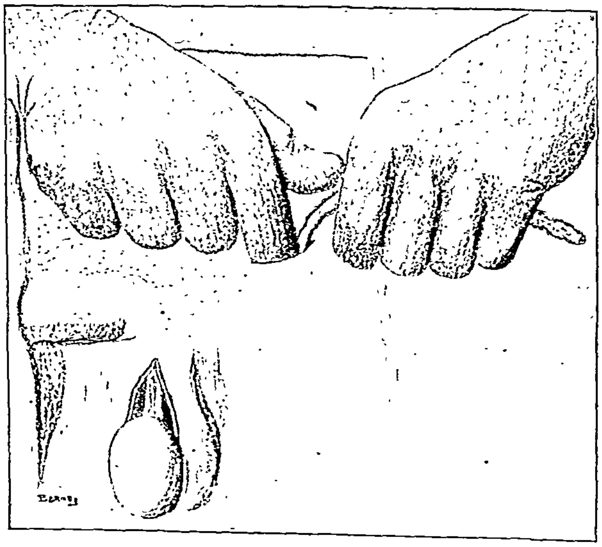

Fig. 2.—Tension is made on the vas by the operator's left hand, while with his right index-finger in the inguinal incision he frees the vas over the pelvic brim.

Dr. A. C. Stokes, Omaha: It is practically impossible to make a clinical diagnosis of tumor of the testicle. The trouble has been to differentiate tumors from gummas, as Dr. Cabot has brought out.

On account of metastasis, I am inclined to believe with Dr. Bloodgood and others that exploratory incision into malignant tumors is not a good thing, especially in the testicle.

Metastasis often follows rapidly on an incision. It seems best to open the scrotum and then, if we should find an infiltrated hydrocele, the procedure is simple, but if we think that the growth is malignant we can make a frozen section and determine its nature at once: if it is malignant, we must take out all the glands as far as possible retroperitoneally.

Dr. Hugh Cabot, Boston: In regard to the management of the vas the point to be remembered is that the involvement of the vesicle and the prostate bears no relation whatever to the involvement of the vas. The process does not reach the vesicle and prostate by continuity, but, as I believe, by the lymphatics. It is not easy to determine the amount of involvement of the vas. You will often find nodules separated by two or three inches. The infection has stopped at certain places along the lymphatics and invaded the vas. I have been disagreeably surprised to find little nodules along the vas far above the point I had suspected, and it has seemed to me that the removal of the accessible portions of the vas is important. I doubt whether the injection of any substance through the vas has any particular effect on tuberculosis of the vesicle, because the process is not in the lumen but in the wall. The vesicle is involved from without, not from within. Certain it is that the removal of the vas in this way—we have been doing it for years—has left the patients much more comfortable, and I must see something other than theoretic reasons for changing my views.

The involvement of the second side is an interesting problem. I do not believe that there is any reason for regarding it as an involvement by continuity. I believe that the process reaches the prostate and the vesicle by the lymphatics, and that it reaches the second epididymis by the lymphatics or by the blood-stream. I do not believe that it walks up one side and down the other any more than I believe that this is the common method of transference of the gonococcus. We want to remember that Keyes' statistics and other large statistics, including a series of one hundred cases by Dr. Barney, show that involvement of the second side must be expected in 50 per cent. of the cases within two years. This might as well be taken into consideration from the first.

It has seemed clear that the leaving of the testicle is important. The testicle is valuable for three reasons: In the first place, it forms spermatozoa. We must recognize at once that those patients with involvement of one epididymis in tuberculosis are sterile as demonstrated by Keyes, Barney and by foreign observers, so that, so far as the spermatogenic function is concerned, we may drop it; but nobody to-day, I think, doubts the presence and the value of the internal secretion of the testicle. The third factor in regard to the testicle is its psychic value to the patient, apart from the internal secretion. The average man is much interested in his testicle, and for what seems to me perfectly sufficient reasons. Now what is the logic of the old method of orchidectomy? If you begin by taking out the first testicle, the patient is liable to put a hard problem up to you or somebody else by coming around with the other testicle involved so that you ought to take that out, and then he refuses to have it done. The logical thing is to leave what is there accessible, not seriously damaged, and take your chances on the other side.

Dust.—There is no substance on the face of the earth which does not enter into the composition of dust. In the home there are particles of furniture, clothing, foodstuffs, animal and vegetable matter, bacteria, particles of wall-papers, plaster, iron and other metals, carpets, rugs, books and everything in the process of nature's decay contributing its quota of dust. In the street all the foregoing are in evidence in the dust, also particles of steel and iron from the wearing of wagon-wheels and horseshoes, gold, sand, stone, hair, excreta, clay, minerals of every kind, bacteria, leather skins, plant life, animal life of many kinds—in fact, there is nothing imaginable which does not contribute to the dust of the earth, and many thousands of dust particles may be found in every cubic inch of the air we breath.—*Bull. Winnipeg Dept. Health.*

CHRONIC STENOSING GASTRITIS *

HORACE W. SOPER, M.D.
ST. LOUIS

Chronic stenosing gastritis was recognized and described by both Andral[1] and Cruveilhier[2] in 1829. Since that date much discussion has ensued among pathologists as to the nature of the process, some maintaining that it is always a malignant or cancerous condition, others that a benign inflammatory stenosis may occur. Among the synonyms found are "chronic interstitial gastritis," "sclerosis of the stomach," fibroid induration," "hypertrophic stenosis of the pylorus," "cirhosis of the stomach" or "linitis plastica." The term "Schrumpfmagen" has been most commonly employed in Germany. Von Sury[3] distinguishes two forms, a carcinomatous and a simple inflammatory type. He defines the latter as a primary increase in the thickness of the stomach wall, produced by a connective-tissue hyperplasia involving the submucosa and subserosa, the capacity of the stomach being diminished by a secondary contraction of the newly formed connective tissue. In a very exhaustive and critical review of the literature, he concludes that the etiologic factors involved in the simple inflammatory type are round ulcer, gastritis phlegmonosa, chronic gastritis, chemical irritants, syphilis, polyserositis occurring in passive congestion in diseases of the liver, heart and lungs, chronic peritonitis, primary *Zuckergussleber* of Curschmann, and trauma.

Congenital hypertrophic pyloric stenosis is not considered here, inasmuch as this condition appears to have no relationship to the etiology of the benign stenosis occurring in adults.

While one cannot deny that the before-mentioned etiologic factors can result in the pathologic process known as simple inflammatory contracted stomach, or *Schrumpfmagen*, nevertheless for clinical reasons it would seem best to restrict the term "chronic stenosing gastritis" to those cases in which a long-continued gastritis has been the causal factor. I shall therefore consider only this simple form, in which the stomach alone is involved. A few have combated this view, notably Charles F. Martin,[4] who takes the position that chronic gastritis has no etiologic relationship to simple contracted stomach. He agrees with Brinton and terms the process linitis plastica, or cirrhosis of the stomach. He considers it due to an overgrowth of connective tissue, such as may occur in any part of the body, caused by unknown irritants.

Von Sury shows that all the careful modern histologic studies of cases reveal the fact that the mucosa as well as the submucosa and subserosa is involved in the inflammatory process, and that pathologically it must be considered as a true gastritis. He particularly emphasizes that the passive congestion occurring in heart failure is a distinct etiologic factor in producing a polyserositis involving the stomach and other abdominal organs, and that Curschmann's *Zuckergussleber* is allied to this process. It is clear that clinically we may exclude cases of this class as well as general chronic hyperplastic peritonitis. Hemmeter refers to the confusion existing in the literature and points out that many cases of ulcer cicatrices have been reported under the term chronic stenosing gastritis. It is obvious that trauma cannot be considered as an etiologic agent.

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* Read before the American Gastro-Enterological Association, Washington, D. C., May 6, 1913.

[1] Andral: Précis d'anatomie pathologique, Brussels, 1829, ii, Part 1, p. 46.

[2] Cruveilhier: Anatomie pathologique du corps humain, 1829-1835, ii, Books 12 and 27.

[3] Von Sury, Kurt: Beitrag zur Kentniss der totalen, einfach entzündlichen Magenschrumpfung und der fibrösen Polyserositas (Zuckerguss), Arch. f. Verdauungskr., 1904, xiii, No. 1, p. 1.

[4] Martin, Charles F.: Osler's Modern Medicine, p. 311.

The cases of Hemmeter and Stokes,[5] Einhorn,[6] Reignier,[7] Gross[8] and others make it clear that syphilis may produce contraction and stenosis of the stomach, which is extremely difficult to differentiate from the condition caused by chronic gastritis. It is probably better, however, to consider this form as only one of the several manifestations of gastric syphilis.

Primary chronic stenosing gastritis, therefore, always results from a long-continued, chronic inflammation. The hyperplasia affects chiefly the pyloric half of the stomach and ultimately results in a diminution in the lumen as well as a narrowing of the pylorus.

The symptomatology is that usually observed in the progress of an ordinary chronic gastritis, except that signs of stenosis gradually appear. In late cases, hydrochloric acid is absent and lactic acid and Oppler-Boas bacilli are often present. Nothnagel mentions that a smooth indistinct resistance may often be palpated. The differentiation from diffuse scirrhus carcinoma may be difficult, as both may give the same stomach content findings. Occult blood is often absent in this type of carcinoma, as well as in chronic stenosing gastritis. The anamnesis and the course of the disease are the determining factors. Recently S. Jonas[9] has asserted that the Roentgen ray will show an insufficient or gaping pylorus in diffuse scirrhus carcinoma.

The stenosis caused by ulcer scar is totally different in clinical manifestations. The presence of hydrochloric acid in the fasting stomach should alone be sufficient to differentiate.

In the vast majority of cases, the diagnosis has been made at necropsy. Even here, difficulties are encountered. Von Sury demonstrates that the endothelial cells of the lymph vessels may assume a peculiar cuboidal form which closely resembles epithelial cells. On the other hand, the epithelial cells may be so few in number as to escape detection in true diffuse carcinoma.

Excluding syphilis and doubtful cases, such as ulcer scar, diffuse carcinoma, etc., the writer limits the number of genuine cases of chronic stenosing gastritis to twenty-nine.

Tilger[10] tabulates twenty-three cases; of this number, four occurred between the ages of 20 to 30, seven between 30 and 40, six between 40 and 50, two between 50 and 60, two between 60 and 70 and two over 70. Boas'[11] three patients were aged 32, 43 and 47, Hemmeter's[12] four patients 23, 28, 36 and 38 years.

REPORT OF CASE

Patient.—A farmer, aged 36, good family history, came under my observation in April, 1910. He had an attack of acute articular rheumatism at age of 14. He uses no tobacco, but had been a steady moderate drinker since the age of 20, averaging three glasses of whisky a day. During the past year he had abstained entirely from alcohol. No history of syphilis. His stomach trouble began twelve years ago; at first, only discomfort and eructations of gas after eating; eventually, nausea and vomiting appeared; never any pain. These symptoms with the usual remissions and exacerbations have persisted since. Six years ago a test-breakfast was given and he was told that he had no hydrochloric acid in the stomach contents. For the past year his appetite has failed, and he has been obliged to resort to liquid and semisolid foods in small quantities. Solid foods as well as large quantities of liquids always produce nausea and vomiting. His strength has failed and he is no longer able to do his work.

Examination.—He is a sparely built man, 5 feet 9½ inches in height, weight 117 pounds. Maximum weight twelve years ago, 135 pounds. He is somewhat anemic looking. Chest reveals nothing abnormal. Abdomen, rather narrow epigastric angle, very little fat, strong musculature. The entire epigastrium is tender to pressure. Tendon reflexes normal. Pupils respond well to light and accommodation. A Ewald-Boas test-breakfast. 60 c.c. Chyme, bad. Much stomach mucus. No hydrochloric acid. Total acidity 8. No rennin, no lactic acid, no long bacilli. Fasting stomach contents, 30 c.c. of yellow turbid liquid; no fetor; no food residue; no hydrochloric or lactic acid. Microscopically there are many pus-cells and squamous epithelial cells. The feces on vegetable diet show no occult blood. Schmidt's test-diet shows a good utilization of the starches, fats and proteins. Blood: Hemoglobin 60 per cent. No leukocytosis. Red-cells 3,500,000, well filled. No poikilocytosis. Wassermann reaction negative.

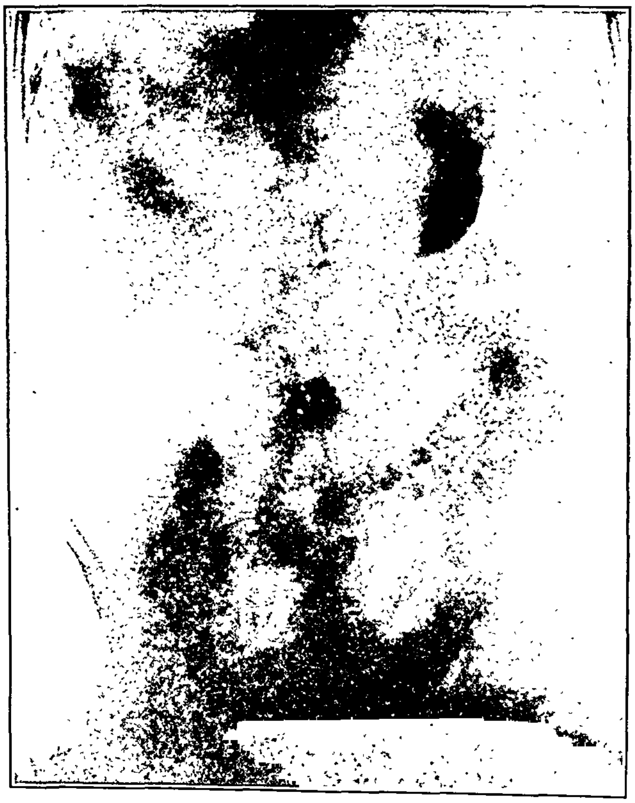

Fig. 1.—View of gastro-intestinal tract, taken immediately after the ingestion of 500 c.c. of bismuth and fermented milk. Note the extensive dissemination in the small intestine. This and the following radiograph were taken by Dr. R. D. Carman.

Urinalysis: The urine is scanty, but otherwise normal.

Treatment.—He was dieted carefully, but grew progressively worse and was confined to bed. Even liquid foods in small quantities were vomited. In June, pyloric stenosis was suspected as the fasting stomach showed small quantities of stagnating food remnants. Lavage produced considerable relief. Roentgenograms could not be procured as the patient could not retain the bismuth meal. In July his weight was reduced to 102 pounds. Lactic acid and Oppler-Boas bacilli were frequently found in the stomach contents. The pus increased in quantity. The glycyltryptophan test was negative. Hemoglobin 35 per cent. The blood-smear showed no signs of pernicious anemia.

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[5] Hemmeter and Stokes: Chronische hypertrophische Gastritis syphilitischen Ursprungs, etc., Arch. f. Verdauungskr., 1901, vii, s. 313.

[6] Einhorn, M.: Ueber Syphilis des Magens, Arch. f. Verdauungskr., 1900, vi, s. 150.

[7] Reignier: Cited by Von Sury: Syphilitische und alkoholische sklerose, augehend vom obersten Teil des Dunndarms mit vorschluss der Lichtung, Jour. de méd. de Paris, 1898.

[8] Gross, H.: Die syphilitische fibröse Magen und Darmstriktur, München. med. Wchnschr. 1903, No. 4.

[9] Jonas, S.: Zur Diagnostik des Schrumpfmagen, Wien. med. Wchnschr. 1909, No. 5, s. 262.

[10] Tilger, A.: Ueber die stenosierende Pylorushypertrophie, Virchows Arch. f. path. Anat., 1893, cxxxii, s. 290.

[11] Boas: Ueber hypertrophische Pylorusstenose (stenosierende Gastritis) und denen Behandlung, Arch. f. Verdauungskr. 1898, iv, s. 47.

[12] Hemmeter, J. C.: Diseases of the Stomach. 1911, p. 613.

August 3: Operation by Dr. Willard Bartlett. The stomach was found to be small and presented a peculiar feeling of resistance. The serosa was thin and smooth, the pyloric region was particularly hard but was smooth and uniform. Anterior gastrojejunostomy was done. The stomach wall was ½ inch in thickness and was difficult to cut through. The incised surface presented a white, almost cartilaginous appearance. The mucosa was thin and anemic looking. The pylorus would not admit the end of the finger. Considerable difficulty was experienced in applying the sutures because of the toughness of the stomach wall. The patient made a good recovery.

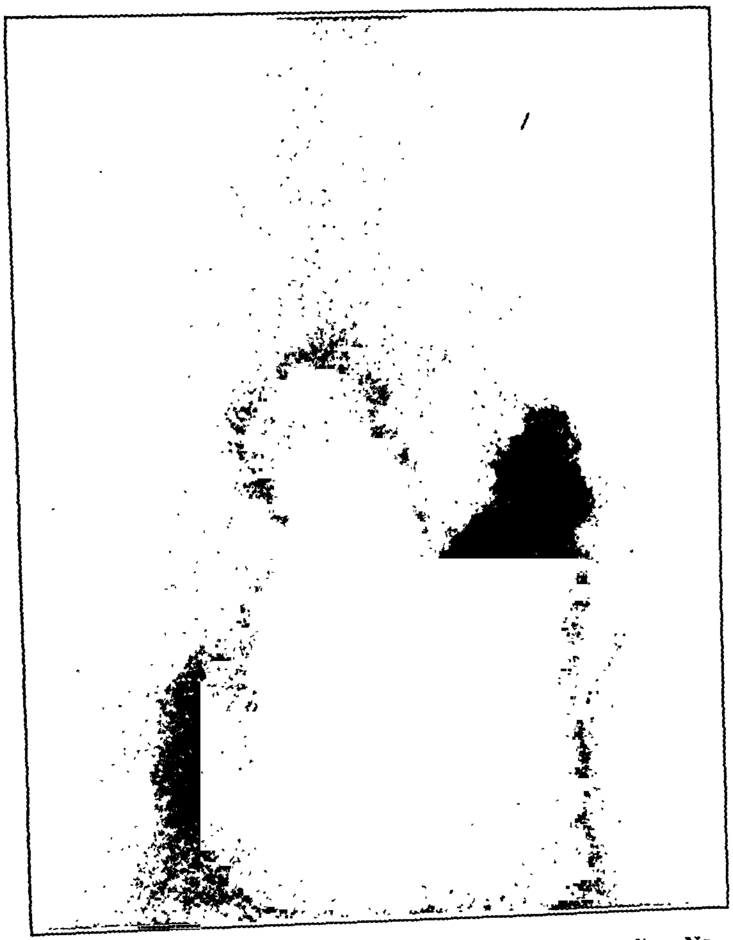


Fig. 2.—Same subject; picture taken immediately after No. 1. Very little of the bismuth mixture remains in the stomach.

Sept. 9, 1910: Weight, 111 pounds. Able to take liquid food without discomfort, no more than 4 ounces at a feeding. Roentgen fluoroscopy: The stomach is small, the bismuth and fermented milk mixture is swallowed slowly and passes at once out of the gastro-enterostomy stoma, so that it is impossible to obtain a view of the stomach contour.

Dec. 20, 1910: Improvement continued, weight 125 pounds. The patient is able to take semisolids and 8 ounces of liquids at a feeding. Fasting stomach contents, 20 c.c. bile-colored liquid, no food residue, no hydrochloric or lactic acid, no pus cells, no long bacilli.

June 13, 1911: Weight 130 pounds. Patient takes larger quantities of foods, but cannot tolerate meats. Test breakfast. 40 c.c. Chyme bad, much stomach mucus, slightly tinged with bile, no hydrochloric or lactic acid, no long bacilli. Fasting stomach contents, 15 c.c. bile-colored liquid, no hydrochloric acid, no food residue, no pus.

September, 1912: Weight 130 pounds. Stomach content findings same as last time. Hemoglobin 75 per cent. Roentgen fluoroscopy reveals stomach dimensions after rapidly drinking 1 pint of the bismuth suspension to be: length from cardia to lower pole, 6 inches; width near cardia, 3 inches; width near pylorus, 1 inch. The food passes very rapidly out of the gastro-intestinal stoma without any intermittence. Very small masses pass intermittently out of the pylorus. There is no peristaltic wave visible; the stomach moves up and down when food is introduced, making an excursion of about 1 inch, not synchronous with respiration. The roentgenograms were taken as rapidly as possible, Figure 1 immediately after the bismuth suspension was drunk, and Figure 2 as soon as a second plate could be put in position.

The rapid dissemination of the bismuth in the small intestine is clearly shown. This is probably due to the gaping of the incision in the thick wall of the stomach.

The patient continues in excellent health, and considering the history of the case and the course of the disease subsequent to the operation, the possibility of carcinoma is probably not to be considered now.

The roentgenograms were taken by Dr. R. D. Carman.

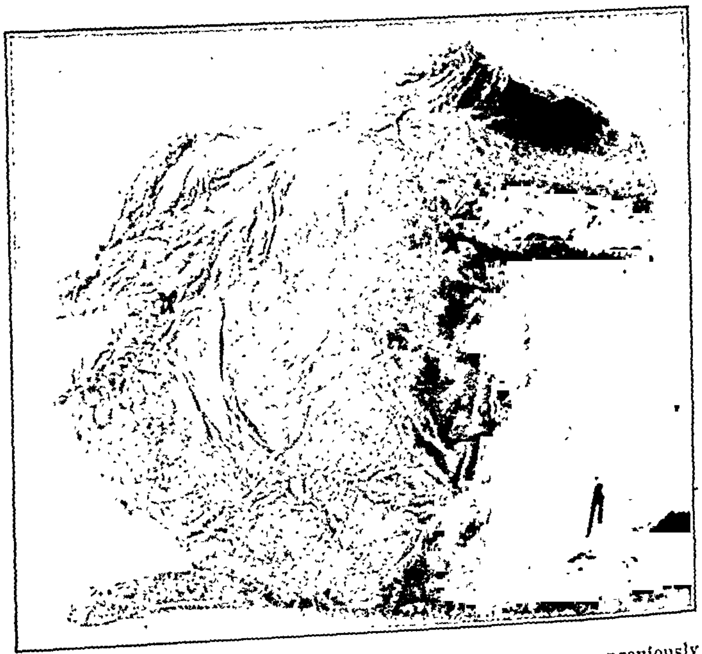
625-632 Metropolitan Building.

BLADDER SUTURE FOUR YEARS AFTER OPERATION

JAMES R. JUDD, M.D., HONOLULU, T. H.

About three years ago[1] I described a case of intraperitoneal rupture of the urinary bladder in which operation was performed seventy-seven hours after the receipt of injury. The patient made a good recovery and was entirely free from any bladder symptoms subsequently.

Four years after the operation the man died of pneumonia and the bladder was removed at the post-mortem examination. There were no adhesions along the suture line. The scar of the rupture is represented by a thin line 2¼ inches in length. At the time of the operation the rent easily admitted four fingers. An additional point of interest is the fact that a careful search failed to reveal any trace of the continuous silk suture used at the operation.



Bladder, showing scar of operation done four years previously for intraperitoneal rupture. The scar extends from points x to x.

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[1] 1. Judd, J. R.: Rupture of the Urinary Bladder Operated on Seventy-Seven Hours after Injury, THE JOURNAL A. M. A., April 9, 1910, p. 1207.

Coal-Mine Accidents.—The risk of coal mining is greatest during the winter months, when the liability of serious mine explosions is increased by the drying of the mines through the entrance of air below the temperature of the workings. —Horton, *Bull. Bureau of Mines.*

A CASE OF DISLOCATION OF PROXIMAL PHALANX OF GREAT TOE

P. G. Skillern, Jr., M.D., Philadelphia

P. W., male, white, laborer, aged 56, reported at the surgical outpatient department of the University Hospital, service of Dr. B. A. Thomas, May 28, 1913, with the history of having been kicked by a horse nine weeks previously, and of having been treated at another hospital for an injury to the left knee. He now complains of pain in great toe. Examination reveals fixation of great toe in extreme extension and crepitation at metatarsophalangeal joint. The roentgenogram (Fig. 1) shows displacement of proximal phalanx of hallux onto the dorsum of the head of its metatarsal. The anteroposterior view (Fig. 2) is of interest in showing concomitant displacement of the sesamoids from the plantar aspect to each side of the joint. Under nitrous oxid reduction was attempted by means of Levis' apparatus, but owing to lacerations of the skin this method was abandoned. A trial was next made of the method proposed by Dr. Crosby of New Hampshire in 1826, for reducing dislocations of the thumb, which was so well spoken of by the elder Gross. The toe was raised perpendicularly and strong pressure applied against the base of the phalanx, so as to push it from behind forward and from above downward. Reduction was maintained by strapping the hallux down on a plantar splint, which was applied after the method described by Cotton.

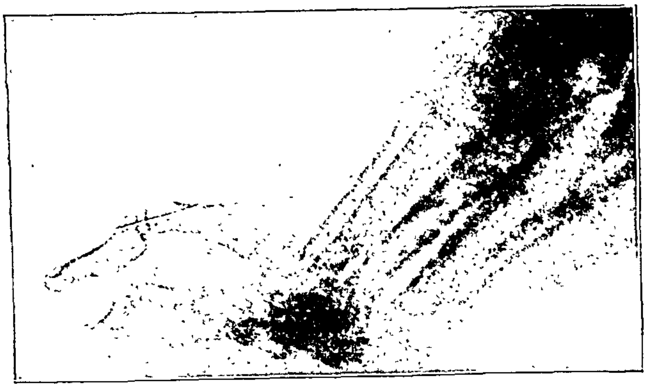

Fig. 1.—Base of proximal phalanx of great toe resting on dorsum of head of first metatarsal. Note plane occupied by sesamoid. Lateral view.

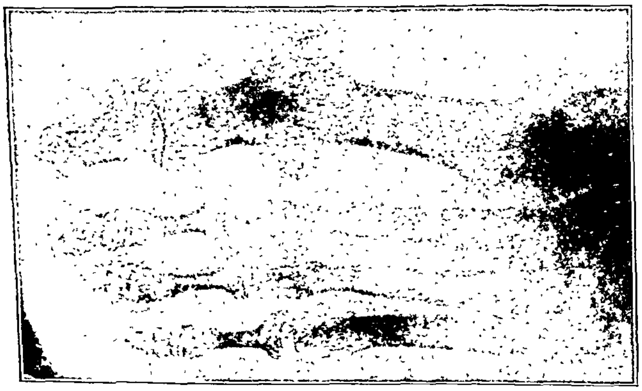

Fig. 2.—Note shortening of hallux and diastasis of sesamoids so as to embrace the joint. Anteroposterior view.

This injury was evidently overlooked at the other hospital, and the deformity must have been greatly increased during the intervening nine weeks by contraction of the extensor hallucis proprius.

That the injury is rare is attested by the statement of Dr. Henry K. Pancoast, who took the roentgenogram, and also by the fact that Gross[1] had seen but two cases. Of twenty-two cases of luxation of the proximal phalanges of the toes Malgaigne states that nineteen were of the great toe. In Holmes' "System of Surgery,"[2] the analogy between this luxation and that of the corresponding phalanx of the thumb is pointed out, as well as a similar difficulty in reduction. In four out of ten cases noted by Malgaigne[3] the reduction could not be accomplished. In accounting for this difficulty of reduction it is of interest in connection with our case to note the statement of Gross[1] that "it depends probably on the manner in which the adductor muscle and the sesamoid bones are dragged by the displaced phalanx backward over the extremity of the metatarsal." The roentgenograms, especially Figure 2, show clearly the relative positions of the sesamoids, and that they in no way interfere with reduction, not in my case at least.

241 South Thirteenth Street.

CASE OF FOREIGN BODY IN THE RECTUM

Frank M. Conlin, M.D., Omaha

On the morning of Aug. 11, 1913, I was called by the proprietor of a hotel to see one of his employees, a dishwasher, who, he said, had been sick since the day before. The patient, a Dane, aged 68, stated that he had fallen on a cup about two weeks before and cut himself. He complained of severe pain in the left iliac and hypogastric region. He gave no history of vomiting, but stated that his bowels had moved the day before and that he had urinated that morning. His temperature was 99 and his pulse 80. There was blood on the bed. Examination showed a mass in the left iliac region.

I took him to the hospital, and on further examination found blood coming from the rectum, and a deep laceration through the mucous membrane and the sphincter muscle in its posterior aspect. Examination under anesthesia disclosed a china cup in two pieces, the smaller piece being about one-third of the side of the cup.

The cup, being firmly held with a pair of pliers, was broken into eight pieces with short quick raps of the hammer on a cold-chisel, and the pieces removed.

I irrigated the area with normal salt solution and could find no perforations. Examination of the cut surface of the sphincter showed an old wound covered with granulations, the bottom made up of fibrous tissue. The sphincter muscle and mucous membrane were sewed later. The man made an uneventful recovery, leaving the hospital in nine days, seemingly with good control of the sphincter. I am convinced that the patient had been accustomed to putting foreign bodies in the rectum for some time to satisfy an abnormal sexual appetite, and that at this time he inserted the cup, when, on account of the spasm of the sphincter at the time of the orgasm, the cup was forced up inside. He evidently had made an attempt to remove it afterward, which would account for its being broken.

The cup, a thick one without handles, measured 82.5 mm. (3¼ inches) in height, 90.5 mm. (3 9/16 inches) in diameter across the top, 51 mm. (2 inches) across the bottom and 1 cm. (6/16 inch) thick.

Kelsey mentions a specimen in the Museum of Anatomy and Pathology in Copenhagen, which was introduced by a patient in an attempt to prevent a prolapsus. It is a long, oval, flat stone about 6¾ inches long, 2½ inches wide, 1½ inches thick and weighs nearly 2 pounds. The stone was extracted by a surgeon, Frantz Dyhr, in 1756.

In the Surgical History of the War of the Rebellion, II, p. 322, there is mentioned an operation performed on a sailor who had introduced into the rectum a stone 5½ inches long by 3 inches wide. The colon was perforated, and the stone was removed from the peritoneal cavity by an incision near the umbilicus.

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1. Gross: System of Surgery, 1882, i, 1162.
2. Holmes: System of Surgery, 1881, i, 989.
3. Malgaigne: Agnew's Surgery, 1881, ii, 126.

New Instruments and Suggestions

NEW KIDNEY FORCEPS

Ferdinand C. Walsh, M.D., San Antonio, Tex.

Those doing kidney work are well aware of the difficulty frequently encountered in the delivery of the kidney preliminary to nephrotomy, nephrectomy or operative procedure on the pelvis or upper portion of the ureter. Tardy delivery is often the main factor in prolonging an operation which otherwise would occupy but a few minutes.

So far as I am aware, all forms of kidney forceps now on the market, when fitted to the kidney, possess the drawback of exerting undue pressure on the renal substance, thereby frequently causing irreparable damage to the organ, or through hemorrhage, from tearing the friable kidney substance, causing the operator much annoyance and extra repair work.

The forceps which I devised, and which I have found serviceable in overcoming those difficulties, as will be seen from the accompanying illustrations, is of a modified obstetric pattern, fitted with a Hodge lock. The opening between the tips of the blades allows a firm grasp of the kidney with non-interference from the pedicle which rides free between. In delivering the kidney, the traction exerted in no way causes compression of the kidney substance, as the blades lock loosely over the kidney, and all force is directed from above downward on the pedicle itself. When the kidney has been exposed, after stripping off its fatty capsule, the anterior blade is first introduced, in order that no damage may be done to the peritoneum. With a finger behind the kidney to locate the pedicle, the blade is carefully put in position, the pedicle being allowed to slip between its tips. The opposing blade is placed in a like manner behind. With the blades locked, gentle traction is made, and in this manner adhesions become taut, and may easily be stripped, or, if deemed expedient, ligated and cut. After delivery, should it be desired to do a nephrotomy or pyelotomy, the handle of the forceps is turned directly backward, the upper blade removed and the lower blade thrust forward, thus allowing the kidney to ride free above the incision, the blades projecting well beyond both edges of the wound, preventing the organ from dropping back into the cavity.

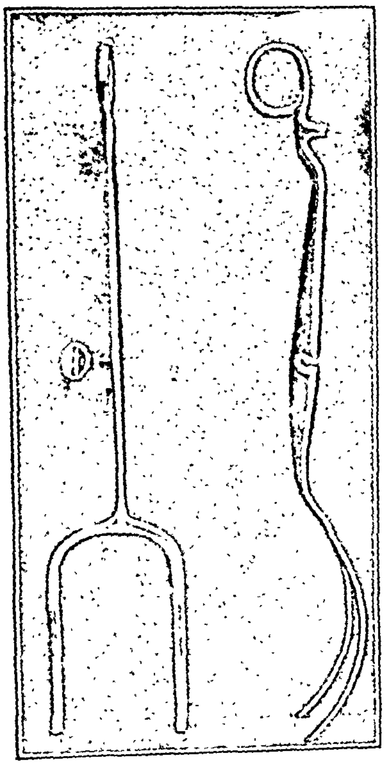

Fig. 1.—Walsh kidney forceps; posterior and side view.

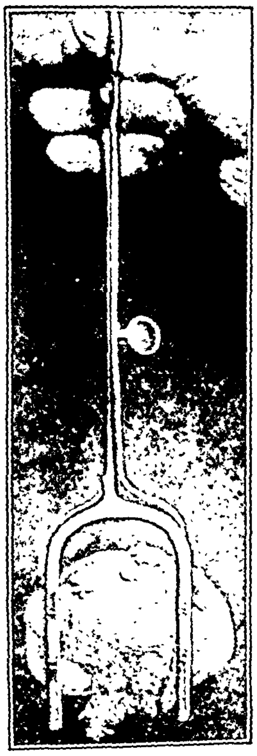

Fig. 2.—Walsh forceps in position on kidney. Note wide space between tines.

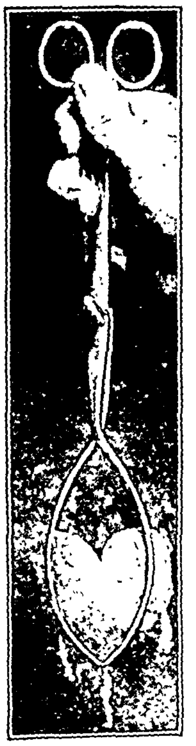

Fig. 3.—Walsh forceps on kidney; side view.

The width between the tines for the reception of the pedicle is 1⅝ inches. The convex blades fully closed measure in their long axis 4½ inches, while the transverse diameter is 2 inches. The kidney used in the illustration is an unusually small one.

Moore Building.

A SIMPLIFIED COLORIMETER

SPECIALLY ADAPTED FOR TESTING THE EXCRETION OF PHENOLSULPHONEPHTHALEIN IN THE FUNCTIONAL KIDNEY TEST *

James I. Armstrong, M.D., Pittsburgh, Pa.

Finding the less expensive colorimeters in general use for the kidney functional test (as popularized by Rowntree and Geraghty) rather unsatisfactory, I devised the instrument here described. Figure 1 shows the colorimeter closed, with an opening in the anterior surface giving a view of the bottles in position. Figure 2 shows the two compartments with closed sides and posterior surface of opal glass. A two-candlepower frosted globe is used for illumination.

The standard solution is made by diluting 6 mg. of phenolsulphonephthalein with 1 liter of distilled water and adding sufficient 25 per cent. sodium hydroxid solution to elicit the maximum color. The small bottle is filled with the standard solution, hermetically sealed and labeled 100 per cent. Serial dilutions are now made of 95, 90, 85 per cent., etc. The bottles are to be kept in a dark case and refilled when necessary. The test is carried on in the usual manner. The urine is diluted to 1 liter with distilled water, to which a 25 per cent. solution of sodium hydroxid is added to give a maximum color reaction, and a small quantity filtered. A bottle of this filtrate the same size as that of the standard solution is placed in one compartment, and the standard solution which matches this in the other compartment and the percentage excreted, read directly.

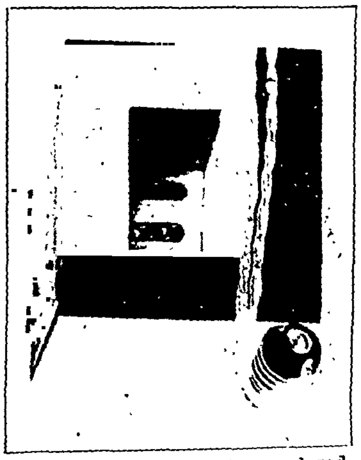

Fig. 1.—Colorimeter closed, showing bottles from anterior.

The advantages which this colorimeter has over others are: (1) its accuracy, simplicity and cheapness; (2) its uniform light at all times, (3) and the ease with which it can be carried in case of emergency.

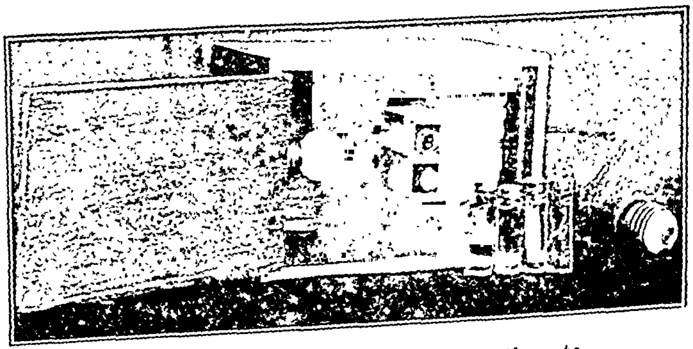

Fig. 2.—Bottles in position, extra bottles, etc.

The instrument can also be used for colorimetric determination of indican, creatinin, etc.

I wish to thank Dr. Fisher, who made the pictures for me.

476 South Rebecca Street.

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* From the Laboratories of the Western Pennsylvania Hospital, Pittsburgh, Pa.

SOME INEXPENSIVE EQUIPMENT FOR THE PHYSIOLOGIC LABORATORY*

Clayton McPeek, M.D., Columbus, Ohio

Many instruments for the work in experimental physiology can be made in the laboratory at little cost. These pieces are sometimes more desirable than factory-purchased supplies and are an especial boon to schools with limited means.

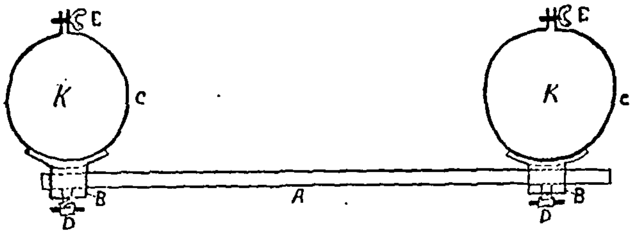


Fig. 1.—*A*, a steel bar ⅝ inch square and 4 feet long which passes through *B,B*; *B,B*, cast-iron pieces 1½ inches square posteriorly, with concave anterior surfaces for the attachment *C,C*; *C,C* are made from strap-iron 1¼ inches wide, ¼ inch thick and of sufficient length to encircle the base of the kymographs, *K,K*; *E,E*, thumb-screws for tightening of parts *C* around *K*; *D,D*, thumb-screws for adjustment of *B,B*, on *A*. The entire apparatus may be nickeled or given a coat of aluminum to prevent rusting.

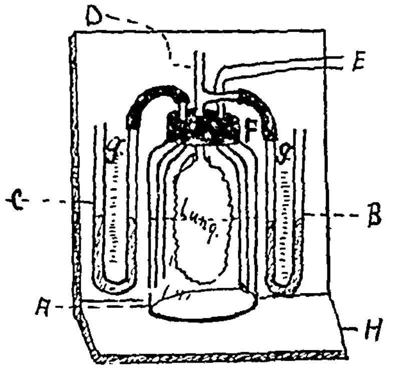


Fig. 2.—*A*, quart Mason jar the sides of which represent the chest wall; *F*, cap of the jar through which a large opening is made and a three-hole rubber stopper is placed; *D*, a T-tube, passing through the opening represents the trachea, to the lower end of which animal lungs are fastened; *B*, a mercury manometer connected to side branch of *D*, registering intrapulmonic pressure; *C*, a mercury manometer connected with space between lungs and bottle, registering interpleural pressure; *E*, a tube connected with a movable reservoir of water, raising or lowering of which will produce respiratory movements; *G,G*, millimeter scales for the exact determination of the changes; *H*, the support to which the entire apparatus is firmly secured. The lungs may be attached to the trachea by removing the cap of the jar and detaching the rubber connections to the manometers.

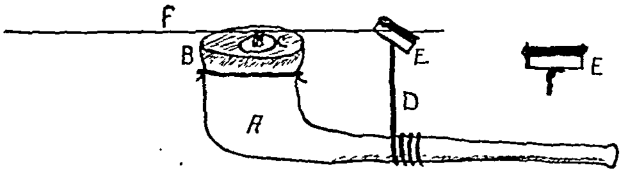


Fig. 3.—*A*, a clay pipe over the bowl of which a piece of rubber tissue is tied; *C*, a piece of cork or circular aluminum plate to which a lever, *F*, is lightly fastened. *D*, a piece of stiff wire encircling the stem; to its upper extremity *E* is soldered; *E*, a narrow strip of tin with ends bent at right angles; a rubber band is lightly stretched between the uprights. The lever, *F*, can be made from aluminum wire. It perforates the rubber band and rests on the cork, *C*.

An extension kymograph suitable for most purposes can be conveniently made by using two ordinary Harvard spring kymographs as a basis (Fig. 1). In operation one drum may be thrown out of gear or both kymographs run at uniform speed. In the laboratory any group of students having two small kymographs can make an extension kymograph. The cost of the entire apparatus is less than $4.

A scheme designed to show phases of respiration, respiratory pressures and their modifications can be made from a quart Mason jar (Fig. 2).

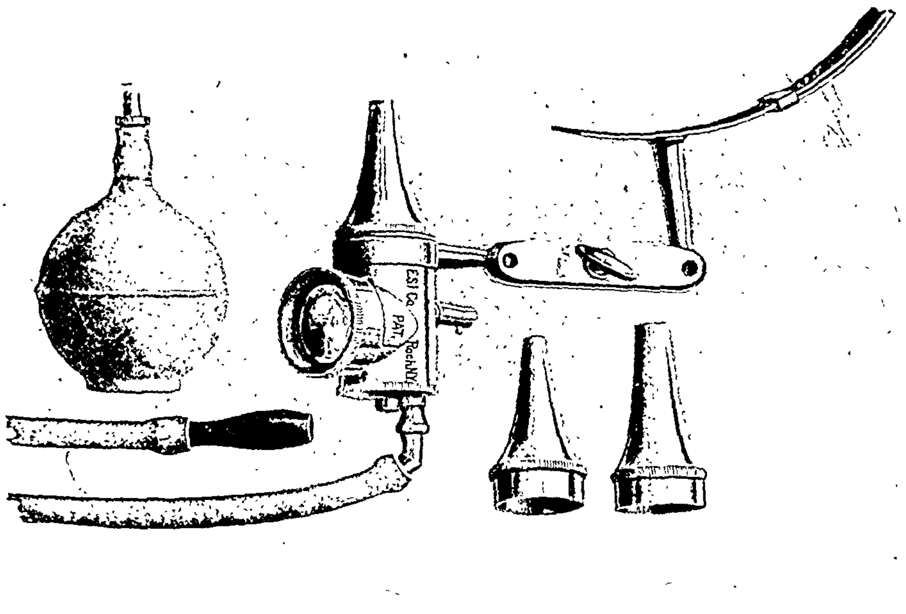
Ether cones suitable for animal work can be made from coarse meshed wire. Rectangular strips of wire are bent into suitable form and the ends soldered or wired together. Pieces of gauze are wound back and forth through the top as in the Allis inhaler. Canvas is sewed on the outside of the cone. If this is then covered with a melted mixture of white wax and paraffin a tight and ether-saving cone results.

An inexpensive tambour can be made from an ordinary clay or cob pipe (Fig. 3).

THE MYRINGOSCOPE

George G. Carroll, M.D., Rochester, N. Y.

This instrument consists of a cylinder, one end of which is closed, and at the other end is fitted any one of three sizes of specula depending on the caliber of the external canal of the ear to be examined. On one side of the cylinder there is a round window with a magnifying lens, while inside and opposite the round window is a plain mirror at approximately an angle of 45 degrees. Inside the cylinder is attached a Tungsten lamp lighted by a 2½-volt dry battery, or it can be lighted by any other rheostat or controller desired. There is also attached to the cylinder an auscultation tube.



Myringoscope, with additional specula and bulb for converting instrument into a Siegel otoscope.

This instrument is held into the canal of the ear by an adjustable spring that fits laterally across the head. Before this instrument is used the external auditory canal should be thoroughly cleansed and an ear-piece of the proper size fitted, while at the same time any unusual characteristics of the external auditory canal can be noted, so that in using the myringoscope the best possible view may be had of the membrana tympani.

In using this myringoscope the spring is fitted across the head from the upper extremity of one ear to the other, the spring being bent first, if necessary, so that it will clasp the sides of the head firmly; then the clamp is bent down and lastly the speculum end of the instrument is swung into the external auditory canal, being pressed inward, upward and backward. It is also to be remembered that all movements are reversed. This instrument when in position gives the operator, while seated in front of his patient, a magnified view of the membrana tympani, while at the same time he has the advantage of the auscultation tube while inflating the tympanum. If a rubber band has previously been stretched around the tip of the ear-piece so as to make it fit as perfectly as possible to the external auditory canal, the instrument can, in a moment, be converted into a Siegel otoscope by attaching a rubber bulb to the auscultation tube at the ear-piece of the operator. Thus a comparison can be made between the excursions of the membrana tympani from inside pressure, and those of the Siegel otoscope compression and aspiration.

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* From the Laboratory of Physiology of the Starling-Ohio Medical College.

So far as I know, the use of such an instrument is new for the study of the patency of the eustachian tube, inflation of the tympanum and the study of the excursion of the membrana tympani from inside air-pressure, as compared to the Siegel otoscope findings from without. Just what its efficiency will be in diagnostic work, time only can tell.

304 West Avenue.

A NEW RETRACTOR FOR THE ABDOMINAL CONTENTS DURING PERITONEAL CLOSURE

M. B. Ahlborn, M.D., Wilkes-Barre, Pa.

This retractor was devised to take the place of the spoon and other appliances, which it becomes necessary to remove after the peritoneum is partially closed. The retractor, as will be seen, consists of five blades (or more if necessary, for increasing its field of retraction), a set-screw and a handle, all of which come apart by simply unscrewing a set-screw, thus rendering washing and sterilization extremely easy.

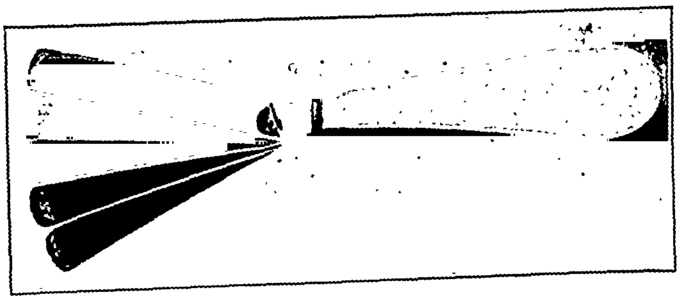


Figure 1.

For use the blades are attached to the handle and spread out like a fan with their edges just touching, this being done to prevent catching any abdominal contents when the retractor is closed and withdrawn at the end of the peritoneal suture (Fig. 1). The blades are set in this fan shape by screwing down the set-screw just tight enough to make them fairly rigid and they cannot become loose and drop off as the fifth or bottom blade has a very deep-seated thread to hold the screw, requiring a number of turns before the screw can be withdrawn from the blades.

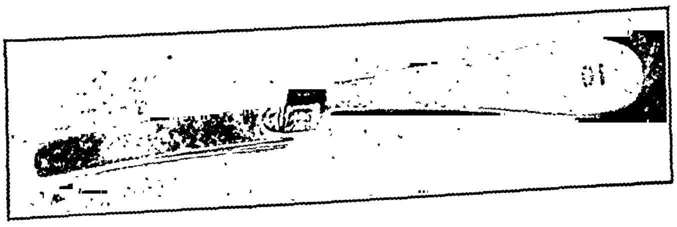


Figure 2.

The retractor is placed in the wound and held by an assistant but not pressed down hard, as this causes the bowels or mesentery to slip up over the edges of any retractor. The weight of the instrument is sufficient to keep all abdominal contents back and the suturing of the peritoneum proceeds in the usual way, the peritoneum being picked up and held for suture by the usual clamps. When the wound is closed, except for the setting of the last stitch, the assistant simply gives a slight pull on the end of the retractor, when it closes as shown in Figure 2. The end of the closed blades can be retained in the angle of the wound until the passing of the last suture and formation of the knot, when it is removed and the knot tied.

The pictures show the instrument about one-third the actual size, it being 8 inches long and 3 inches across the outspread blades, when they are overlapping edge to edge. Of course the size of this retractor may be varied by altering the length and breadth of the blades.

It has been in practical use for some time and answers the purpose better than any I have yet seen devised.

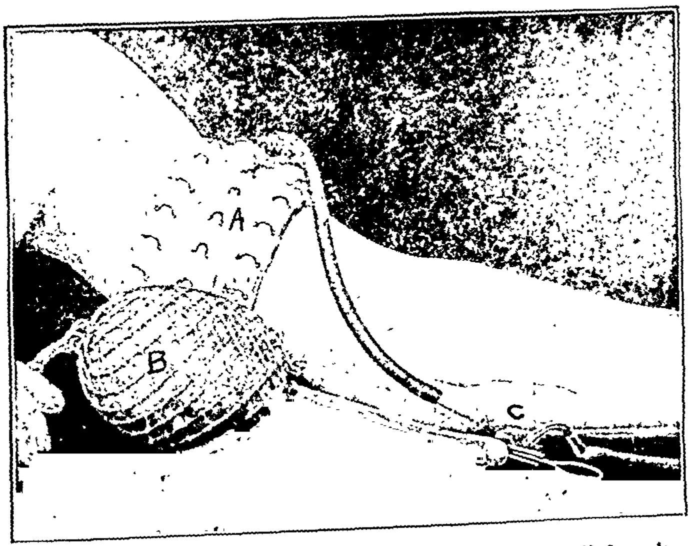
99 North Franklin Street.

A SIMPLE TOURNIQUET USED IN GIVING SALVARSAN INTRAVENOUSLY

Thomas F. Laurie, M.D., Auburn, N. Y.

This simple and useful tourniquet consists of parts from a sphygmomanometer (Riva-Rocci). As may be seen from the illustration the parts used are the arm band, the inflating bulb and the relief cock, all connected by rubber tubing.

I present this more for those who are accustomed to giving salvarsan or neosalvarsan in their offices with no help except that which can be given by the patient. My experience has been that rubber tubing wears out very soon by repeated boiling and use; pressure has to be maintained for a longer period than is necessary with this apparatus and after the needle is inserted into the vein it is often folly to let go of it to release the tourniquet. I have also found that it is difficult for the patient to release it with one hand. Bandages and like materials are not good for the same reason and also on account of their inelasticity.



Tourniquet: A, arm band; B, inflating bulb; C, relief cock.

It is easy with this apparatus, after one has everything sterilized, including the hands, to request the patient just before inserting the needle into the vein, to inflate the arm band by means of the bulb. Then, when the fluid is ready to flow, it is a simple matter for the patient to release the pressure by pressing the relief-cock with his free hand.

15 Grover Street.

Resistance of the Bladder to Tuberculosis.—The bladder offers considerable resistance to attack by the tubercle bacillus, even when the mucous membrane is injured, as shown by experiments. Rovsing has demonstrated that tubercle bacilli, injected into the bladder and allowed to remain, often fail to produce a lesion. This explains how it is that in many cases of tuberculous nephritis the bladder remains healthy. But if other pyogenic organisms, and especially those which decompose urea, are present, the resisting power of the mucous membrane is greatly weakened, and secondary infection is almost certain to occur.—David Newman, M.D., *Glasgow Med. Jour.*, October, 1913.

Therapeutics

INFANTILE CONVULSIONS

Although the occurrence of convulsions is only a troublesome symptom of an underlying condition and, therefore, an entity, still the issue is of such importance that active means must many times be taken for their suppression, and prompt treatment must prevent, if possible, their recurrence. Prevention presupposes a diagnosis of the cause. The predisposition to convulsions which occurs in infants and young children is manifestly because of the ease with which their central nervous systems may be inordinately excited. This is shown by the fact that the conditions which frequently cause convulsions in young children may not cause them in an older child. About 75 to 80 per cent. of all infantile convulsions occur under the third year of life, and almost all (unless epileptic) occur before the child is five years old. Nearly 50 per cent. of all infantile convulsions occur during the first six months of life, nearly 25 per cent. before the end of the first year, not far from 25 per cent. during the second year, and in a few instances they occur as late as the fourth or fifth year.

Heredity seems to play a large part in the frequency of the convulsive seizures. The child of neurasthenic, hysteric and neurotic parents seems to be predisposed to convulsions. Healthy children from healthy parents rarely suffer convulsions, unless from some acute cause. If births are too frequent, the later children, even of healthy parents, are more or less predisposed to convulsions, because of their lessened vitality. The probability of convulsions in an artificially fed child is greater than it is in one who is breast-fed or who receives properly modified cow's milk.

Chronic, debilitating diseases, such as syphilis, tuberculosis, scurvy, anemia (whether from hemorrhages or from lack of nutrition), and rickets, especially, are frequent causes of infantile convulsions. They are also commonly caused by gastro-intestinal disturbance, perhaps an acute indigestion, with colic, vomiting, diarrhea, and more or less sudden absorption of toxins; or a chronic indigestion with a constant absorption of irritant products. In children affected by chronic intestinal disorder there is more or less emaciation and debility. In considering rickets as a cause, perhaps the underlying condition—some disturbance of one of the internal secreting glands, or improper food—may, through the debility so induced, result in convulsions, either from local irritation or toxic absorption. Convulsive movements such as slight muscle rigidities or mild laryngeal spasms often occur without intensification into a general convulsion. Sometimes this condition becomes a tetany.

Irritation of the gums during dentition is not as frequent a cause of convulsions as it once was thought to be, and the fact should be generally recognized that teething, as such, causes neither convulsions nor infantile diarrhea; but, if there be a swollen, red, edematous gum over a tooth that is about to erupt, it may be the cause of a convulsion, and should be lanced.

Intestinal worms probably do not cause infantile convulsions, but in producing active intestinal indigestion they promote the absorption of irritant toxins.

Besides the pain caused by inflamed gums, pain produced either by an inflammation in the ear, or by some other acute inflammation in the head, may be the cause of convulsions. Acute pain anywhere may cause such spasmodic crying and contractions of the muscles that congestion of the brain and a convulsion will result. Obstructive adenoids in the nasopharynx seem at times to be a cause of convulsions.

Irritation from a very much elongated and almost impervious prepuce has been a cause.

The statement has many times been made that the high fever incident to an acute infection frequently causes these diseases to be ushered in by a convulsion. While such convulsions in young children are not uncommon, still they can hardly be said to be frequent, and although they have been likened to the chill with which infections in older children and adults begin, they should not often be so considered. A convulsive onset in such acute infections as scarlet fever, diphtheria and measles is infrequent.

Acute lung congestion, as in pneumonia, may produce preliminary convulsions in very young children. Meningitis in any form presumptively induces convulsions somewhat more frequently in children than in adults.

Whooping-cough also may cause cerebral congestion and even meningeal hemorrhage sufficient to occasion convulsions, though a real apoplexy with paralysis from this disease has not occurred.

Convulsions that occur in a child soon after birth are often the result of instrumental delivery, and may be due to the abnormal pressure consequent on some displacement of the cranial bones. Convulsions from this cause may be frequent and for some time persistent, or they may soon cease. The condition is always serious, for there may be some hemorrhage into the meninges or the brain tissue, with an associated paralysis.

The relationship of infantile convulsions to epilepsy should always be noted. A considerable percentage of cases of epilepsy in children and a tangible percentage of cases of epilepsy in adults can be shown in which infantile convulsions have occurred. A careful study, therefore, of the frequency and the character of the convulsive attacks in young children may show that the child is suffering from epilepsy, and the cause of the epilepsy must be sought.

TETANY

Although tetany was first noted and mentioned about 1830, it was almost lost sight of as an entity until about 1890, and since this date, more and more frequently, the condition has been noted and its relation to the internal secreting glands investigated.

Without discussing the history of these investigations, it will be sufficient to say that MacCallum, Voegtlin, Halsted and others have shown that the parathyroid glands are essential to health, and that their removal will cause convulsions or tetany, and later death. It was long thought that to remove the thyroid would cause these convulsions, but this effect was principally because the parathyroids were removed at the same time. MacCallum discovered that the convulsions could be stopped by feeding parathyroid glands or extract, and Halsted, by the transplantation of parathyroid gland tissue, secured the same result. MacCallum also showed that the administration of calcium salts would stop convulsive movements in animals from which the parathyroid glands had been removed. It seems established, then, that parathyroid secretion either detoxicates some product of metabolism, or that its relationship to calcium prevents the loss of calcium to the body; that calcium is a nervous sedative, or at least in its abnormal absence the nervous system is hypersensitized, so that hyperexcitability occurs and the so-called condition of "spasmophilia" develops.

While it has not yet been shown that all or perhaps even many cases of tetany can be attributed to hyposecretion in the parathyroid glands, still some necropsic findings have shown, in children who have had tetany and convulsions, that there were hemorrhages into the parathyroids, which interfered with their function. It seems quite likely that some cases of tetany and perhaps of infantile convulsions are due to disturbance in the parathyroid glands. It has been shown by some investigators that young infants suffering from spasmophilia and later proved to have some pathologic condition of the parathyroid glands, have evidenced during their period of illness a hypersensibility to the galvanic current. A clinical determination of the border-line between normal and abnormal sensibility to electric stimulation is, of course, difficult. It has long been known that sufferers from hypersecretion in the thyroid, especially as in Graves' disease, have an increased sensibility to electric stimulation.

When the parathyroids are removed and the animal is not allowed to die of intoxication calcium is not normally deposited in bone structure as has been shown in an examination of the teeth. We may, therefore, assume that parathyroid disturbance means calcium disturbance, that some instances of infantile tetany and convulsions are due to disturbed calcium metabolism, and that these convulsive movements may at times be stopped by the administration of calcium. A careful study of the food of infants in which this condition of spasmophilia is present, has shown many times that the food was poor in calcium, namely, that calcium starvation is a distinct cause of these conditions.

Dr. Clifford G. Grulee[1] of Chicago has published a suggestive article on this subject. He states that in 1905 Finklestein observed that an irritating substance prevalent in the whey of cow's milk could cause convulsions. This statement seems to have been confirmed by cases described by Grulee.[2] After he became convinced that a food consisting of a carbohydrate combined with the curds of milk the whey of which had been discarded, was relatively non-irritating in these cases, he attempted to discover by experiments on animals and careful observations on infants what the particular substance was in the whey which produced the irritating symptoms.

He based his experiments on the hypothesis that calcium and magnesium salts tend to allay nervous irritability, while sodium and potassium salts increase it; that, when there is a relative increase of calcium and magnesium over sodium and potassium salts, nervous irritability should decrease, and when sodium and potassium salts are increased relatively to calcium and magnesium, that nervous irritability should increase. Nervous irritability in infants and in animals is most accurately estimated by electric reaction, especially to the galvanic current. It was impossible, however, in his animal experiments to draw any definite conclusion as to why the tendency to tetany in infants is so markedly reduced when the whey is removed from the food.

TREATMENT

If the little patient is in a convulsion, or convulsions occur frequently, it is of prime importance, both for the infant and for the parents, that the seizures be immediately stopped; and, of course, there is nothing more efficient and perhaps more harmless than the administration of chloroform. It takes but little chloroform to quiet the small patient, and unless chloroform must be used continuously, it probably leaves few, if any, after effects. If the convulsions recur as soon as the child comes from under the anesthetic, a hypodermic of morphin, not more than 1/30 grain for a child a year old, seems generally justifiable in convulsions (although this is a large dose) and may prevent the necessity of the frequent use of chloroform.

It is self-evident that the child must be treated symptomatically; the convulsions must be stopped, whatever the cause may be. Sometimes convulsions will cease, temporarily at least, when the child is placed in a warm bath, that is, a bath a little warmer than the temperature of the child. It should not be hot and certainly should not be cold. Cold applications to the head at the same time may be used, if deemed advisable. The object is to bring the blood to the surface of the body, to dilate the blood-vessels in the abdominal cavity, and thus to relieve the cerebral congestion and perhaps irritation. If the child has high fever, as soon as it is taken out of the warm bath an ice-cap may be applied to the head more or less intermittently, and with the precautions usual for a young infant. Persistent use of cold on the head, especially in the occipital region, is inadvisable for an infant, as its tendency is to depress the medullary centers.

Rectal injections of chloral are often used, the dose depending on the age of the child, but may be larger than should be given to the same child by the mouth; namely, from 0.20 to 0.30 gm. (3 to 5 grains) may be used.

Again, symptomatically, after the convulsions have ceased, bromids may be administered for a day or two, if there seems to be great nervous irritability or excitability. The dose should be graded according to the results; some children require a considerable amount of bromid to quiet them. A safe method is to administer 0.05 gm. (about 1 grain) every three hours, stopping if the child is drowsy.

As soon as the emergency indications have been met the physician should carefully study the condition of the child, primarily for digestive disturbance, and secondarily for all possible reflex causes. Generally, whatever the cause, a good cathartic (best castor oil) should be administered as soon as possible, or an enema may be advisable. Not infrequently there will be a history that the child has eaten something especially disturbing, and an emetic such as ipecac, or a stomach washing, may be indicated.

The child's previous diet should be carefully analyzed, looking toward the possibility of its having been deprived of nutriments that are needed for its welfare; insufficient and improper nutrition can certainly predispose to a hyperexcitability of the nervous system and to convulsions, and the indication for a radical change in diet is often evident.

Grulee reports several cases of convulsions which came under his care in which the convulsions quickly ceased after the whey had been removed from the cow's milk. Sometimes the convulsions recurred when whole milk was again given to the children. The whey-free milk treatment was supplemented in several instances by a thorough clearing out of the intestinal canal, and in other instances by the administration of chloral by the rectum. His favorite food mixture for children consists of curds of 30 ounces of whole milk with 40 ounces of arrowroot water. The amount of the curds should be diminished for younger children. Saccharin is sometimes added to the mixture, and in some cases dextrimaltose. Grulee found not only that the convulsions diminished and ceased, but also that the electrical irritability usually diminished.

That the addition of sodium and potassium salts, corresponding in quantity to those contained in the whey, did not regularly increase the electrical irritability. Grulee thinks is due to the fact that the forms in which the sodium and potassium were given, that is, sodium chlorid and potassium chlorid, either were not readily absorbed from the gastro-intestinal canal, or these salts are not in themselves the irritating factors.

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[1] Grulee, Clifford G.: Dietetic Treatment of Convulsions and Allied Conditions Occurring in Infants, Am. Jour. Dis. Child., March, 1913, p. 205.

[2] Grulee, Clifford G.: Arch. Pediat., 1912, xxix, 24.

He sums up the results of his experiments and observations as not confirming the hypothesis that the increased electrical irritability in spasmophilia is the result of a disturbance of calcium and sodium equilibrium.

If a child shows signs of tetany, however, and certainly if it shows rickets, calcium is indicated, as well as food that contains calcium. Calcium may be given as limewater, as calcium lactate or as calcium glycerophosphate. Calcium lactate 0.05 gm. (about 1 grain) may be given three or four times in twenty-four hours; or 0.10 gm. (about 2 grains) of calcium glycerophosphate may be given in the same frequency. Calcium lactate should be dissolved, calcium glycerophosphate should be given as powder, and either may be administered in milk.

If any one of the many reflex causes of convulsions has been diagnosed, the treatment that must be instituted is self-evident.

If it is decided that the trouble is a beginning epilepsy, the treatment should be directed toward removing any possible evident cause. If no tangible cause can be discovered, bromids should be given more or less continuously to prevent, if possible, the epileptic habit. It is not the object of this article to present the exact treatment of epilepsy.

GONORRHEA

As no method of treating this disease is the sole method approved, it behooves every physician who treats gonorrhea to study every thoughtful paper on the subject. Dr. George A. Wyeth[1] of New York has presented several recommendations for the treatment of this disease.

Wyeth thinks it is always possible to shorten, and sometimes practically to abort, acute gonorrhea. He believes that a smear of the discharge should be taken each time the physician sees the patient, and that the microscope should determine the treatment: (*a*) the microscope will show if true gonorrhea is present; (*b*) as long as gonococci are present in any number the discharge should not be checked by astringent injections, as they inhibit the local leukocytosis and phagocytosis, which constitutes Nature's method of antagonizing the gonococci and preventing their migration to other parts of the body.

Gonorrhea can be cured, Wyeth thinks, if the center of the infection be definitely located and that region scientifically treated. From his pathologic investigation of acute gonorrheal inflammations, he believes that the process is not early distributed over the entire surface of the urethra, but is predominantly lacunar and perilacunar, and also that phagocytosis is the main defense made by Nature against this germ. He finds that the gonococci on the surface of the epithelium are generally intracellular, while many in the lower strata of the mucous membrane are extracellular; when the discharge shows most of the gonococci to be intracellular the disease yields more readily to treatment and is less stubborn than when many of the gonococci are extracellular. The conclusion arrived at, therefore, is that leukocytosis and the purulent discharge should be encouraged rather than checked, as the greater number of leukocytes in the discharge the greater the likelihood that the gonococci are intracellular. Wyeth uses silver preparations in weak solutions for injection, but the method is best studied in his paper.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

DIGIPOTEN.—Digipoten consists of the digitalis glucosides in soluble form, diluted with milk sugar to give the preparation an activity approximately equal to that of digitalis of good quality. Digipoten is standardized by the "one-hour frog" and the guinea-pig methods, and it is adjusted to an activity of approximately 1,400 heart tonic units (of Houghton). It contains from 0.3 to 0.4 per cent. of digitoxin as determined by a modified Fromme method.

Actions and Uses.—Digipoten has the same activity as digitalis leaf of good quality and may be used like the official drug with respect to indications and dosage.

Dosage.—The same as digitalis.

Manufactured by the Abbott Alkaloidal Company, Chicago, Ill. No U. S. patent or trademark.

Digipoten Tablets.—Each tablet contains digipoten 0.03 Gm. (½ grain).

Digipoten is prepared by extracting digitalis leaves with diluted alcohol, the alcohol being removed by distillation in vacuo, the resulting extract filtered, and the filtrate precipitated with tannin; the precipitated tannates of the glucosides are washed with water, and the glucosides are liberated in the usual manner. The resulting dark green brittle powder, which has an activity of about 12,000 to 16,000 heart tonic units, is triturated with sufficient milk sugar to reduce the activity of the finished product to the standard.

Digipoten is a pale green powder, possessing the characteristic bitter taste of digitalis. It is soluble in water and in 25 per cent. alcohol.

On ignition it leaves no appreciable amount of ash. If 0.1 Gm. of digipoten be dissolved in 2 Cc. of glacial acetic acid containing a trace of ferric chlorid and underlaid with concentrated sulphuric acid, there appears at first a brownish zone, changing to red, and finally the upper layer changes to a dark green (Digitoxin).

In addition to the biological standardization the digitoxin content of digipoten is determined by the following modified Fromme method: 30 Gm. of digipoten are placed in a flask of 500 Cc. capacity, and 270 Gm. of water and 10 Gm. of lead acetate are added and allowed to macerate for three hours with constant agitation. The precipitate is allowed to settle and 207 Gm. of the clear liquid is decanted upon a filter of a diameter of 18 Cm. The excess of lead is removed from the filtrate by the addition of 5 Gm. of sodium sulphate dissolved in 6 Gm. of water. The precipitate is allowed to settle and 164 Gm. of the clear fluid, representing 15 Gm. of digipoten, is passed through a filter. This filtrate is transferred to a separatory funnel of a capacity of 250 Cc. and 4 Cc. of ammonia water is added, after which it is extracted with four to five portions of 45 Cc. each chloroform, the successive extractions being filtered through a chloroform-wet filter into a tared Erlenmeyer flask. The chloroformic extracts are then evaporated on a water bath to a constant weight. The crude digitoxin is dissolved in 4 Gm. of chloroform and the solution is poured into a mixture of 10 Gm. of ether and 70 Gm. of petroleum ether with constant agitation. The resulting precipitate is collected on a filter of 5 Gm. diameter and washed with a small amount of petroleum ether. The washed residue is dissolved in hot absolute alcohol and rinsed into the tared Erlenmeyer flask previously used. The alcohol is evaporated on a water bath and the residue is dried to a constant weight at a temperature of 90 to 100 C. and the weight of the purified digitoxin is determined.

TANNIGEN TABLETS.—This dosage form of an accepted proprietary article has been accepted.

Each tablet contains tannigen 0.5 Gm. (8 grains).

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[1] Wyeth, George A.: New York Med. Jour., June 14, 1913.

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SATURDAY, DECEMBER 6, 1913

ALIMENTARY TOXEMIA—INTESTINAL AUTO-INTOXICATION

The interchangeable expressions, "alimentary toxemia" and "intestinal auto-intoxication," are employed with a degree of facility in medical literature that might lead one to suppose they designate some very definite clinical entity or easily recognizable group of symptoms. Indeed, the words have already found application in reading-matter that appeals to an even wider circle; for they enter into the advertising columns which are edited for the perusal of the layman by the exploiter of proprietary remedies.

Let us frankly admit at the outset that much, if not most, of what has been written or spoken on the subject is largely based on figments of the imagination or uncritical endeavors to provide a seemingly comprehensive general explanation for a variety of unrelated common symptoms of human malaise. In the midst of all this ignorant and pseudoscientific argument it is refreshing to hear of the review of the real status of the question of alimentary toxemia and of the frank exposure of the limitations and inconsistencies of current knowledge of a hazy topic which was made by some of the speakers in a recent symposium on this theme before the Royal Society of Medicine in London.[1] Dr. W. Hale White, in particular, called attention to the fact that much that is maintained in reference to alimentary toxemia really is inadequate and unjustified. Presumably what is usually meant by this term is an illness due to poisons absorbed somewhere in the alimentary canal and produced within the gastro-intestinal tract by microorganisms resident therein. Yet no one who accepts this point of view can explain what these poisons really are nor can he identify the bacterial organisms which are charged with pernicious chemical activity. As Hale White notes, the expression "alimentary toxemia" at once shows our ignorance, for it is unscientific to group cases of poisoning according to the point at which the poison entered the body. The nature of the poison should be the distinguishing factor; "it is a minor matter whether our murderer comes in at the window or at the door."

While protesting against the current practice of talking learnedly where ignorance still reigns supreme, we need not despair of decided progress in the future. Hitherto it has been indol and its derivatives, phenols, a few diamins like putrescin and cadaverin, hydrogen sulphid, and a few other compounds—but particularly the first group—which have had to bear the burden of the charge of specific toxicity in the discussions on auto-intoxication. Research in the field of biochemistry is, however, continually adding new possibilities in this direction. The production of highly active substances like beta-imidazolethylamin from histidin in the alimentary tract is an illustration. There are, without doubt, numerous other pharmacologically potent compounds derived from our food-fragments by bacterial reactions which proceed beyond the limitations of the reaction of the ordinary digestive enzymes.

It is by no means unlikely that what is termed alimentary toxemia may in some cases really be hepatic disease—that the failure of the liver to protect the organism is the real fault. Dr. Saundby insists that under physiologic conditions the natural protective agencies in the alimentary system are sufficient to shield the body from the dangers of poisons formed therein or those introduced with the food, provided that these are not overwhelming in amount. Such morbid symptoms as arise may well result from a breakdown in the protective machinery in consequence of functional defects or pathologic changes in the organs concerned. When we ask, however, what the latter may be, no reply that extends beyond the suggestion of analogies is forthcoming.

Of course, no discussion of alimentary auto-intoxication is complete without reference to intestinal stasis as a predisposing cause. What symptoms and conditions have not been ascribed to this? Cystic disease of the breast, cancer, duodenal ulcer, Bright's disease, exophthalmic goiter are actual examples. As a matter of fact infrequent evacuation of the bowel is consistent with perfectly good health and longevity; and simple constipation—that is, mere fecal retention—by no means necessarily favors the production of poisonous substances or the occurrence of pathologic symptoms. If, however, alterations in the wall of the alimentary tract have taken place many symptoms may result from fecal stasis; and it is perhaps to such inflammatory consequences that objectionable accompaniments of constipation may be attributed. We are favorably impressed by the remark of Saundby that so long as the several organs concerned are structurally healthy, the intestinal contents are practically outside the body and are powerless to injure us. Infrequent or incomplete evacuation of the colon is not of itself necessarily a cause of disease.

If the ill health involved in the conditions under discussion were due to special bacteria the best treatment would be to prevent the ingestion of the offenders. Owing to our ignorance of the cause this cannot be done. Nor does the use of so-called intestinal antiseptics offer any promise of success. The widely proclaimed sour-milk therapy has sought to prevent the formation of the medium in which the bacteria grow; but the outcome is frankly uncertain if not actually disappointing. Where there is delay in emptying the bowel, a dozen and one devices, from the simplest aperient to the most complex hydropathic treatment, are available, and some surgeons like Arbuthnot Lane have been trying to limit the hypothetic formation of hypothetic poisons in the intestine by preventing delay of evacuation through the short-circuiting or removal of the large bowel. Here we cannot refrain from quoting the words of Hale White: "When these cases are reported we are always assured that all medical means had been adopted without benefit, but we are never told what the medical means were. . . . A suspicion comes to one's mind sometimes that perhaps some surgeons do not know all the means the physician has at his command for the treatment of delayed action of the bowels."

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[1] Proc. Roy. Soc. Med., 1913, vi, Supplement, Part 1.

MAN, MONKEY AND THEIR PARASITES

The so-called specific immunity reactions which have been so extensively investigated in recent years have emphasized some unusual relationships among animal species. These have expressed themselves, for example, in the precipitin and hemolysin reactions. The serum of an animal immunized against human blood gives also a precipitate in the serum of the anthropoid apes. Similarly the hemolysins specifically developed to lake human blood-corpuscles act on those of the man-like apes. The reaction at once ceases, however, in the case of the ordinary monkeys.

A recent writer remarks that embryology, paleontology and comparative anatomy may have taught the same general facts, but it comes as somewhat of a shock to many to realize that man's kinship to the monkey goes so far as a "blood relationship." Few persons are as yet aware of the fact that this relationship of man by no means applies to all of the monkey tribe, but only to that group including such examples as the chimpanzee, orang, gorilla and gibbon, and not to the more common monkeys of the *Macacus* type. This subtle distinction shown in the various serum reactions is of unusual scientific interest. V. L. Kellogg, entomologist of Leland Stanford Junior University, has furnished a new and somewhat startling kind of evidence of the relationship of man to the anthropoid group of apes in distinction from others of the monkey tribe. It is based on the contention that the host distribution of the wingless, permanent skin parasites (ectoparasites) of the higher animals, including birds and mammals, is governed more by the genetic relationships of the hosts than by geographic range or any other environmental condition.[1] If this is correct the kinds of permanent ectoparasites found on individuals will indicate in some measure the genetic relationships of the hosts.

According to Kellogg[2] the wingless, permanent ectoparasites of birds and mammals are of two groups, namely, the biting lice, *Mallophaga,* feeding on the feathers and hair, and the sucking lice, *Anoplura,* feeding on blood. Certain mites (*Acarina*) may perhaps also be assigned to this category of permanent wingless parasites, but the fleas cannot be, for they hop on and off their host, and all their immature life is non-parasitic and wholly apart from their future hosts. The *Mallophaga,* of which nearly two thousand species are now known, occur chiefly on birds, while the *Anoplura,* of which less than a hundred are known so far, are confined to mammals. No biting lice have been found on man or on any anthropoid.

Sucking lice of species representing two genera, *Pediculus* and *Phthirius,* occur on man. Representatives likewise have been found on the anthropoid gibbons and chimpanzee. The other tailed monkeys which, in contrast with the man-like apes, are shown by the "blood relationship" tests to be unrelated to man, harbor parasites of entirely distinct genera. The resemblance of man to his simian cousins crops out in this most unexpected fashion.

How these remarkable affinities of host and parasite are preserved is not easy to explain. The California entomologist responsible for the facts recited states that he has often become, in the course of collection, the temporary host of various bird- and mammal-infesting biting lice, but these parasites all seemed as anxious to escape as he was to have them. And they did escape; or, if they did not, they died in a few hours. There is, indeed, an extraordinarily exact fitting of parasite to host in the case of biting and sucking lice. It is hard to understand—to quote Kellogg—of just what details this fitting consists, beyond the more obvious structural and morphologic differentiations. The essential fitting is far more subtle. It is a fitting to the host's physiology as well as to its epidermal structures.

THE STATUS OF THE BOUILLON CUBE

A survey of the advertising literature in which catch-phrase display-lines form a conspicuous feature reveals the novel expression "bouillon cubes" among the more recent innovations. We assume that the thinking part of the purchasing public, and above all the physicians, have by this time been educated into an appreciation of the limitations of extract of meat as a source of nutriment to the human body. There was a day when, owing to the domination of Liebig's teachings and the influence of his honored name, beef extract was looked on as embodying the very essence of nutrition. The fact that the nitrogenous extractives of muscle tissue furnish to the organism neither constructive material nor energy in any noteworthy amount does not, of course, impugn their efficiency in vigorously exciting the secretion of the gastric juice, promoting the flavor of foods into which the extract of meat may enter and in rousing the appetite. We must never lose sight of the fact that this is their true function in both health and disease. They are flavoring agents and, in the words of a well-known writer on dietetics, "their proper place is in the kitchen and not by the bedside."

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[1] Kellogg, V. L.: Distribution and Species-Forming of Ectoparasites, Am. Naturalist, 1913, xlvii, 129.

[2] Kellogg, V. L.: Ectoparasites of the Monkeys, Apes and Man, Science, 1913, xxxviii, 601.

However widely this fact may deserve appreciation and even seem to receive it at present, the American public is a gullible one. From the claim that extract of meat — to quote some actual representations of misbranding — is "a concentrated food that represents the nourishing constituents of fresh beef," or "a combination of all the strengthening and stimulating properties of prime lean beef," or "the most perfect form of concentrated food known," it has been a short step to another suggestive type of advertising. Now it is to the category of the "brain-fag" relievers that the extract of meat in its up-to-date guise of bouillon cubes has been consigned by the present-day exploiter. Undue claims of nutritive superiority are no longer made; but the meat extractives have joined the brigade of ready-relief specifics which are intended to enable the jaded worker to finish his day's task. At any rate the rôle of the bouillon as stimulant alone is implicitly recognized in this latest enterprise.

Without entering here into the physiologic or dietetic merits of the propaganda for beef-tea drinking, we may nevertheless call attention to some economic fallacies involved in the use of bouillon cubes and point out some unexpected features of their composition.[1] Common salt is the foremost constituent, contributing from 49 to 72 per cent. of the total weight of the cubes of ten leading brands manufactured in the United States and Germany last year. The amount of real meat extract present ranged from 8 per cent. in the poorest to only 28 per cent. in the best brands marketed. It is true, to speak in all fairness, that most of these cubes have no advertised claim to be concentrated beef broth or essence. Many persons, however, believe them to be so, little realizing that cubes which contain about two-thirds salt and never more than one-third meat extract are an expensive form of securing the flavor and other virtues of the latter.

Home-made meat broth or meat and vegetable soups contain more meat extractives and real nutrients than the commercial preparations, and they are cheaper than the bouillon or soups prepared from commercial cubes, extracts or juices.[1] This fact need not, however, condemn the popularity of a harmless ready-to-use expedient in the hasty and convenient preparation of a cup of palatable bouillon. One might as well argue that the nutritious ready-to-eat cereals are to be rejected because they are more expensive and, in the taste of many, more palatable than the old-fashioned oatmeal which requires a somewhat laborious culinary treatment. Our contention is that the public, and the physician in particular, should be educated to know precisely what is involved when claims pertaining to diet as well as to drugs are made to attract a purchaser. They can then intelligently count the cost, and balance convenience and elegance against personal effort and economy.

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[1] Those who are specially interested in this topic will find additional details in a publication by Cook, F. C.: Bouillon Cubes: Their Contents and Food Value Compared with Meat Extracts and Home-Made Preparations of Meat, Bull. 27, U S. Dept. Agric., Washington, 1913, p. 7.

WHERE IS SUGAR BURNED IN THE BODY?

There can be little doubt that the chief seat of the destruction of sugar, the form in which the carbohydrates are finally utilized in the body, is located in the musculature. Energy is immediately needed there and there it is doubtless liberated in the course of the metabolism of the carbohydrates. Older experiments of Chauveau and Kaufmann have indicated that the venous blood flowing from a contracting muscle contains less sugar than the arterial blood flowing to it. A similar consumption of glucose, the normal blood-sugar, has been described as occurring in the isolated contracting mammalian heart when fed with Ringer's fluid containing a small proportion of the carbohydrate in question. We have on a previous occasion pointed to the observations of Knowlton and Starling[1] that a heart, fed with blood and performing a normal amount of work, is able to use up sugar, the consumption of the latter amounting to about 4 mg. per gram of muscle per hour.

The foregoing considerations, though plainly involving the muscle in the metabolism of the carbohydrates, do not elucidate the precise conditions under which the sugar utilization really takes place. Some years ago Professor Cohnheim[2] of Heidelberg offered evidence which he believed demonstrated that the muscles contain an enzyme which can facilitate the combustion of sugar. According to Cohnheim it was not present in the muscle in a preformed state, but required an activator which was furnished by the pancreas. Experiments *in vitro* with muscle tissue-juice and sugar, with and without additions of pancreatic extracts, seemed to substantiate this thesis. It was an interesting outlook, since the alleged facts afforded a convenient basis for attractive hypotheses regarding the undeniable rôle of the pancreas in carbohydrate metabolism, in conjunction with the necessary postulates respecting the participation of the muscles.

The subsequent history of this episode, with its contentions that Cohnheim's results were due to contaminations of a bacterial nature, the repetitions by other workers, the successive contradictory announcements of results now positive, now negative, form a spirited chapter in the investigation of tissue function. The complete exclusion of bacteria in experiments on isolated tissues calls for the greatest care and refinement of laboratory tech-

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1. Sugar Combustion in Pancreatic Diabetes, editorial, The Journal A. M. A., Oct. 25, 1913, p. 1539.
2. Cohnheim, O.: Ztschr. f. physiol. Chem., 1903, xxxix, 396; 1904, xlii 401; 1906, xlvii, 253.

nic. A recent reviewer, Professor von Fürth of Vienna,[3] while admitting the justification of much of the criticism in this field and inclining to an attitude of skepticism toward the repeatedly reported demonstration of sugar destruction by isolated muscle substance, cannot become convinced that, after all, there is not some active factor involved. We are thus prepared for the latest venture in this field of research. Gigon and Massini[4] at Basel have taken up the problem anew. Again we have the story of extreme precaution in the conduct of the tests, the supreme importance of such precaution having been prominently emphasized through much well-directed criticism in the past. The outcome was positive. Sugar was found to disappear when digested aseptically with fresh comminuted muscle tissue. The loss of sugar was not merely small but pronounced.

Reports of this sort, encouraging the belief that the destruction of sugar under the influence of some thermolabile component of muscle tissue is at length definitely demonstrated, are renewed from time to time apparently regardless of the undisputed fundamental findings of Levene and Meyer[5] which bring the subject into a new light. According to these investigators at the Rockefeller Institute in New York the disappearance of glucose noted in even the most carefully conducted experiments with the various tissue extracts is not due to destruction, oxidation, or "combustion" of the sugar, but merely to its synthesis or condensation to compounds of larger molecular weight which do not respond so readily to the analytic methods commonly employed. These important researches place the alleged use of sugar by the tissues in such experimental trials on an entirely different basis. They cannot be overlooked even though they run counter to the hopes which have so often been raised of a final answer to the question which heads these remarks.

DO THE KIDNEYS HAVE SECRETORY NERVES?

The wonderful adaptability of the kidneys to certain needs of the organism, and the ready response which they show to seemingly minute changes in the chemical environment of their cells and to more remote circumstances that determine the conservation or elimination of water under sundry conditions, inevitably suggest an inquiry into the nature of the renal mechanism. It has been a familiar experience to rely on the nervous system to explain the more subtle regulatory functions of the organism. In the glandular organs, in particular, the rôle of secretory nerves has long been a prominent one. The dependence of the alimentary digestive secretions on the participation of nervous stimuli in many of the secretory manifestations affords a classic illustration of this familiar relationship. The kidneys have been among the last of the glandular organs to resist the attempt to explain their secretory behavior by the assumption of nervous factors. Gland structures like the adrenals, in which the conditions for the demonstration of the direct participation of nerve stimulation are far from ideal, because the measurement of the effect of the conjectured nervous impulses must be a very indirect one, have nevertheless of late given evidence of secretory innervation in the hands of such investigators as Asher, Elliott and Cannon. The thyroids have been under suspicion in respect to a possible nervous control and have not lacked the charge, as yet not satisfactorily sustained, of response to secretory nerves.[1] It has been generally admitted or assumed, however, that the activity of the kidney must be determined primarily by chemical stimuli. The delicate sensibility which it displays in reacting to the slightest deviation from the normal of blood composition, by excreting water or dissolved substances, is thus analogous to the form of humoral regulation on which the efficiency of the "hormones" is supposed to rest.

The local nervous mechanism of the kidneys has been believed to affect their secretory activity in the direction of augmenting or decreasing it solely by corresponding alterations in blood-supply. The widely—and we believe almost universally—accepted belief that the vasomotor mechanism and changes in the vascular supply furnish practically the only way in which the central nervous system can directly affect the secretion of the kidneys has lately been questioned by Asher and Pearce.[2] Through direct experiment by the familiar methods of nerve stimulation they have reached the conclusion that the vagus contains secretory fibers for the kidney, and that the stimulation of these fibers initiates an increased secretion of urine. The elimination not only of water, but likewise of other urinary components is promoted by the intermediation of these vagus nerve impulses. The investigators seek to fortify their contentions by pointing out that the necessary correlated anatomic evidence is not wanting; for Smirnow[3] is said to have demonstrated nerve-endings in the epithelial cells of the urinary tubules.

It is obvious that if the conclusions of Asher and Pearce are substantiated a revision of many existing ideas in reference to renal secretion may be called for. Purely mechanical explanations of diuresis and the action of drugs on the kidneys must be examined in the light of the new evidence.

We may safely assume that a statement of such far-reaching importance advanced by workers well known in the field of physiologic research will receive prompt critical examination, the results of which must be accepted by those who are interested in the theory of glandular functions.

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[3] Von Fürth, O.: Probleme der physiologischen und pathologischen Chemie, 1913, ii, 327.

[4] Gigon, A., and Massini, M.: Muskulatur und Glykogen, Biochem. Ztschr., 1913, lv, 189.

[5] Levene, P. A., and Meyer, G. M.: Jour. Biol. Chem., 1911, ix, 97; 1912, xi, 347, 353.

[1] Asher, L., and Flack, M.: Ztschr. f. Biol., 1911, lv, 83. Asher, L., and von Rodt, W. E.: Zentralbl. f. Physiol., 1912, xxxi, 223. Asher, L.: Ztschr. f. Biol., 1912, lviii, 274.

[2] Asher, L., and Pearce, R. G.: Nachweis der sekretorischen Innervation der Niere, Zentralbl. f. Physiol., 1913, xxvii, 584.

[3] Smirnow: Anat. Anz., xix, 347.

Current Comment

HAS THE VIRUS OF VACCINIA AND VARIOLA BEEN OBTAINED IN PURE CULTURE?

The virus of variola and of vaccinia is less sensitive to the action of glycerin than bacteria in general, and for this reason it is possible to obtain an almost pure virus of practically full strength. Prolonged action of the glycerin, however, destroys the virus, but more rapidly at 37 C. (98.6 F.) than in the cold; if kept at from — 5 to — 15 C. (from 23 to 5 F.), glycerinated virus may remain active for years. A consideration of these facts led Fornet[1] to try other sterilizing agents, which, while freeing the virus from bacteria, would permit of its being preserved by other means than freezing. Ether was found to be such an agent, etherized virus remaining sterile and active for weeks after inoculation on various culture-mediums, such as broth, agar, etc. The continued activity of the virus thus treated was tested by inoculation of rabbits, calves and human beings with the usual typical reactions of vaccination. Etherized virus has even been carried through a series of inoculations on broth, beef-serum and agar without apparent loss of virulence, and Fornet concludes that there is hardly any doubt that proliferation must have taken place. He calculates that in the last instance the dilution of the sterilized virus would have reached 1 : 1,000 billions if there had been no growth; hence, if Fornet is right, growth without doubt did occur. Examined with the ultramicroscope and in other ways, the supposedly pure cultures of virus show minute structures that appear somewhat as diplococci of unequal size surrounded by a clear zone. Similar bodies were found in "cultures" prepared in the same way with the contents of a small-pox pustule. If these results can be repeated, a great advance will have been made, as there will be opportunity not only to study the virus in pure culture, but also to provide a better virus than now available for vaccination. The principle involved may be applicable to other diseases and will soon be given a thorough trial.

ARSENICAL MYELITIS FROM NEOSALVARSAN

Following the introduction of salvarsan as a therapeutic agent came occasional reports of arsenical poisoning in cases in which it was administered. Many of these were explained as due to overdosage, or to fault in the technic of administration, but ill results occurred which admitted of no such explanation. Gradually neosalvarsan, a compound of arsenic of somewhat more complex molecular structure than salvarsan, has come into use, and experience indicates that it is the safer agent of the two; but neosalvarsan is not without its dangers. Thus Chiari[2] reports a case of myelitis ending in death which in all likelihood was caused by neosalvarsan. The patient was a woman, aged 27, with secondary syphilitic manifestations; she received three intravenous injections of neosalvarsan at four-day intervals, in all 3.3 gm. Immediately after the last injection a scarlet rash appeared, followed by severe vomiting and a few days later by inability to void urine. Six days after the last injection sensory and motor disturbances appeared, progressing to a definite inferior paraplegia. Large, rapidly spreading bed-sores developed, and also a severe cystitis. The condition progressed steadily with severe pains in the legs, diarrhea and anemia, to a fatal termination in six months. Necropsy showed extensive degeneration in the anterior horns and anterior and lateral columns of the cord. In the seventh to ninth dorsal segments the process was so wide-spread that no normal nerve-tissue was discernible in a cross-section of the cord. There was nothing in the clinical history or post-mortem findings which suggested any other explanation of the development of this condition than arsenical poisoning. Chiari cites similar cases and calls attention to the parallelism between the symptoms in these cases and those sometimes manifested in arsenical poisoning from other sources. In salvarsan and neosalvarsan reliance is placed in combinations of arsenic of complex molecular structure. In this form the arsenic is relatively non-toxic, but as in the case of many other compounds, the biochemical agencies of the body may split the complex chemical structures into simpler ones, reducing the non-toxic combinations into products which may be highly toxic to the tissues of the human organism. So long as we are not able to predict with certainty what chemical reactions may take place within the body under various conditions, there will remain more or less risk connected with the administration of drugs so potentially toxic as are these higher compounds of arsenic. For future guidance, all instances of unfavorable outcome after their use should be recorded in detail with great care.

OVERCROWDED STREET-CARS

A narrow car; seats filled with persons attempting to read newspapers while the car swings and jolts along its way; aisles jammed with men and women, boys and girls and tiny children, swaying and rubbing, one against the other, coughing and sneezing, pushing and pressing — what a sight for a progressive age; what a sermon for the moralist; what a despair for the student of public health and hygiene! Endless problems are presented by this picture, seen daily in nearly every American city. Most important is the menace to health from the thousands of bacteria, hidden in the throats of diseased men and women, and sprayed directly into a stagnant air, moist and unmoving in the absence of sufficient means of ventilation. Virulent organisms are inhaled into the throats and lungs of tired workers and tiny babes, who form an excellent host for their quick cultivation. The fare for the ride is small, but the cost cannot be estimated in terms of dollars and cents.

DANCING FOR THE AGED

The following newspaper item just received emphasizes the point made in our comment last week regarding the danger for old persons of the newer dances:

> Shortly before midnight last night at his home, occurred the death of Dr. ———, who for more than forty years had practiced his profession in this city. His death is all the

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[1] Fornet: Deutsch. med. Wchnschr., 1913, xxxix, 1813.

[2] Chiari: Ueber eine nach Neosalvarsaninjektionen aufgetretene "Myelitis, Verhandl. d. deutsch. path. Gesellsch., Marb., April, 1913.

more tragic because a short time before the summons came, he had been with his wife in attendance at a dancing party at Cronkhite Hall, where he had been learning the tango and other new dances. The strenuous exercise, it is thought, somewhat affected his heart, causing his death.

Medical News

CALIFORNIA

New Hospital Assured for University.—The task has now been completed of raising $600,000 in subscriptions for the erection of a new teaching hospital for the University of California. The work of securing the subscriptions was in the hands of Regent William H. Crocker, Dean Herbert C. Moffitt of the Medical Department of the University of California, and Dr. Wallace I. Terry. Plans are now being prepared by Mr. Louis Hobart for this new University Hospital, which will be started next spring on the "Affiliated Colleges" site on Parnassus Avenue, San Francisco, adjoining the present University of California Hospital. Among the principal donors were John Keith of San Francisco, who gave $150,000 in memory of his wife; Mr. William H. Crocker and Mrs. Harriet Alexander, who gave $50,000 each; and Mr. Charles Templeton Crocker and Mrs. Malcolm Whitman, who gave $25,000 each, this $150.000 being in memory of the late George Crocker, who founded the Cancer Research Fund entrusted to Columbia University.

ILLINOIS

Personal.—Dr. George A. Zeller, superintendent of the Peoria State Hospital, has been appointed alienist of the state board of administration, vice Dr. Frank P. Norbury, Springfield, resigned.——Dr. Harry M. Hayes, Peoria, who has been seriously ill at the Proctor Hospital with typhoid fever, is reported to be improving.——Dr. Rockwood Sager, Rockford, is reported to be critically ill at his home.

Health Conditions in Chicago.—The *Bulletin of the Chicago Department of Health*, November 8, reports that the death-rate in the city of Chicago for the ten months of 1913 from all causes was 15.3 per 1,000 as against 13.8 for the same period of 1912. The report states that in nearly all diseases that contribute most heavily to the death-rate increases are shown over the corresponding period of 1912, particularly with reference to the dirty air diseases, influenza, pneumonia and tuberculosis. Scarlet fever showed the largest increase, with a record of 852 deaths for 1913 as against 452 for the same period in 1912, an increase of 400 deaths. During this period in 1913, increases are shown in the number of deaths from measles and diphtheria and the diarrheal diseases of children under 2 years of age. The month of October, however, showed an improvement over the corresponding month of the previous year, except that the typhoid deaths amounted to forty-two as against twenty-two for October, 1912. The narrow source from which a large number of typhoid cases frequently come is illustrated in the typhoid in Chicago. Ten cases were traced to one milk-wagon driver who stayed at work after he fell sick. Twenty-nine cases were traced to one kitchen helper who came to Chicago from St. Louis half recovered from typhoid. To Oct. 1, 1913, thirty-nine out of each 100 cases of typhoid in Chicago had contracted the disease outside of the city.

Chicago

Dispensary Opened.—The Salvation Army has opened a free dispensary at 6 East Seventh Street, where Dr. George Ensminger will be in attendance from 12:30 to 2:30 p. m. daily.

Examination for County Hospital Positions.—Thirty-four physicians on the staff of the Cook County Hospital took the examination for chiefs of the thirteen departments, November 28.

Isolation Hospital Site.—The finance committee of the city council voted November 25 to purchase about 18 acres of land, lying south of the bridewell, for $185,000. The site is to be used for a new isolation hospital and for other municipal buildings.

Small-pox in the Healthatorium.—Once on a time there was a group of men whom Nature had endowed with many muscles and a peculiar conformation of cranium. Having much muscle and a modicum of medical knowledge they founded a school of "physcultopathy" which is a hybrid of uncertain etymology, the significant part being "cult," which has been described by the Chicago Health Bulletin as "a group of individuals who frequently claim as one of their cherished privileges the right to disseminate false information concerning the efficacy of vaccination against small-pox." Now there came to the home of the cult, which was known as the Macfadden Healthatorium, a humble unvaccinated disciple from Idaho. Ten days after he arrived, he came down with small-pox, which was unrecognized as such, having no legal existence under the laws of a Healthatorium. He returned to the school while in a contagious state and now ten other unvaccinated disciples are guests of the isolation hospital. A newspaper clipping continues as follows:

> "Dr. Spalding said he held the authorities at the Macfadden school in no wise culpable, but he said none of the patients had been vaccinated.
>
> "At the physical culture school last night students, patients of the sanitarium and employees were nursing arms vaccinated by the health authorities. About seventy-five were vaccinated.
>
> "In the homes of the six patients like precautions were taken. Members of their families were all required to undergo vaccination.
>
> "The healthatorium was in charge of Charles D. King. He showed no alarm over the outbreak.
>
> "A. M. Wood, the manager of the healthatorium, said he felt no cause for alarm."

One of the patients has said that if King and Wood had small-pox, he would feel no alarm. The general conclusion reached is that although a mass of muscle will move mountains, a good vaccination is more powerful in preventing small-pox.

INDIANA

Hospital Funds Secured.—The campaign opened by 200 men of Marion and Grant County, October 14, to raise $40,000 for a new hospital for Grant County, was closed after eight days with a total subscription of $45,005.90.

New Officers.—Twelfth District Medical Society in Fort Wayne, November 5: president, Dr. James W. McKinney Bluffton (reelected); councilor, Dr. Elmer E. Morgan, Fort Wayne.——Eleventh District Medical Society at Peru, October 16: president, Dr. George R. Daniels, Marion; secretary-treasurer, Dr. James L. Gilbert, Logansport (reelected).

New Hospitals.—St. Joseph's Hospital, Ft. Wayne, which has been erected at a cost of $150,000, has just been completed. The building is six stories in height and is in charge of the Poor Handmaids of Jesus Christ.——The corner-stone of the North Pavilion of the Methodist Hospital of Indianapolis was laid by Bishop William F. Anderson, November 26.

Conference of Charities.—The twenty-second annual session of the Indiana Conference of Charities and Corrections was held in Gary, November 17 and 18, and the following physicians were elected to office: vice-presidents, Dr. Kipplinger, Michigan City, and George R. Green, Muncie, and chairman of medical committee, Dr. Charles P. Emerson, Indianapolis.

Personal.—Dr. Walter R. Cleveland has been appointed president of the Evansville Board of Health.——Dr. Martin K. Kreider, Goshen, has been appointed a member of the board of trustees of Clarke Hospital, Elkhart.——Dr. James A. Taylor, Montpelier, has been elected secretary of the newly organized Blackford County Association for the Study and Prevention of Tuberculosis.

Secretaries of Tuberculosis Society Organize.—The organization was perfected in Indiana, October 17, by secretaries of city and county tuberculosis societies. W. D. Thurber of Indianapolis was elected president and C. A. Hartsley, Evansville, vice-president; Mrs. E. B. Connolly Kehrer, Anderson, secretary-treasurer, and Dr. A. L. Ziliak, Princeton, chairman of the executive committee.

IOWA

New Officers.—Southwestern Iowa Medical Association at Burlington, November 20: president, Dr. Coral R. Armentrout, Keokuk; secretary-treasurer, Dr. Edward F. La Force, Burlington. Mount Pleasant was selected as the next place of meeting.

Personal.—Dr. J. B. Gardner, Manilla, is critically ill in the Methodist Hospital, Omaha.——Dr. C. De Witt Rawson, Otley, was seriously injured by the overturning of his automobile, November 13, near Otley.——Dr. W. E. Sanders has been appointed head of the pathologic department of the Methodist Hospital, Des Moines, and Drs. John H. Peck, J. Z. Strawn, Milton G. Sloan, Matthew L. Turner and Nellie S. Noble have been added to the medical staff of the institution.——Dr. Ray R. Kulp, Davenport, fractured his right arm while cranking his automobile, November 10.——Dr. Harry R. Layton, Leon, who has been critically ill, is reported to be improving.

MARYLAND

Musicale Given by Physicians.—A musicale was given at Osler Hall, Baltimore, November 11, by the Doctors' Orchestra and the chorus of the Medical and Chirurgical Faculty of Maryland, for the benefit of the Book and Journal Club. Dr. John Wade directed the orchestra and Dr. B. Merrill Hopkins conducted the chorus.

Personal.—Dr. and Mrs. Curtis F. Burnam, Baltimore, sailed for Europe November 19.——Lieut. John C. Stansbury, M. C., N. G. Md., has been commissioned captain and placed in command of Field Hospital, No. 1, succeeding Major Howard E. Ashbury, made a member of the general staff.——Lieutenants G. Milton Linthicum and Frederick H. Vinup, Baltimore, have been promoted to captaincies and assigned to duty with the Fifth and Fourth Infantry, respectively.

Academy of Science Meets.—The National Academy of Science, after a two days' session at Johns Hopkins University, closed its meeting with a dinner at the Maryland Club at which Dr. Welch presided as toastmaster. Dr. Simon Flexner, New York City, discussed the causes of infantile paralysis, the experiments made in isolating the germs of the disease and the effects of the virus on monkeys. Dr. Howard A. Kelly made an address on "Radium as a Cure for Cancer."

New Officers.—Medical Association of Harford County at Havre de Grace: president, Dr. J. Lee Hopkins, Havre de Grace; secretary, Dr. Charles Bagley, Bagley.——Medical Society of the University of Maryland at Baltimore, November 19: president, Dr. Albert H. Carroll; secretary, Dr. Edward J. Maldeis.——Washington County Medical Society at Hagerstown, November 13: president, Dr. Daniel A. Watkins; secretary, Dr. Ivan M. Wertz, both of Hagerstown.——Frederick County Medical Society at Frederick, November 12: president, Dr. Ralph R. Browning, Myersville; secretary, Dr. Bernard O. Thomas, Frederick.

Academic Day Exercises.—At the academic day exercises at the University of Maryland and St. Johns College, November 11, the honorary degree of LL.D. was conferred on Geheimrat Privy Councilor, Prof. Adolph Schmidt, of the medical faculty of the University of Halle. Dr. Schmidt was presented by Dr. John C. Hemmeter, who spoke briefly of the achievements of the German professor. The memorial address for Dr. Eugene F. Cordell, eminent as a medical historian and a member of the faculty of the university, was delivered by Dr. Ralph Winslow. After the academy day exercises luncheon was served at the Emerson and the annual alumni dinner was held in the evening.

MASSACHUSETTS

Addition to Hospital.—The Board of Health of Springfield is building an addition to the Municipal Tuberculosis Hospital to be used by nurses. The addition is 21 by 16 feet and one story in height.

State Board Appointment.—Dr. George L. Richards, Fall River, has been nominated by Governor Foss as a member of the state board of registration and medicine to succeed the late Dr. Edwin B. Harvey, Boston.

State Board Approves Recommendations.—The Industrial Accident Board of Massachusetts has notified the Essex North District Medical Society, that it has approved the following recommendations of the medical advisory committee and will apply them as far and as soon as practicable.

1. That a permanent Advisory Medical Committee is necessary.
2. That we consider it inexpedient to have a medical man as a member of the Industrial Accident Board.
3. That the Industrial Accident Board should have a consulting surgeon on whom should fall the duty of detail work in preparation of matters to be laid before the Advisory Committee. Matters in dispute regarding services and fees of physicians should be referred to this Committee for recommendation.
4. That insurance companies be requested to provide suitable blanks for notifications as well as specifications of services rendered by physicians.
5. That Industrial Insurance Companies be encouraged to allow all reputable physicians to render services in industrial accidents provided they are willing to render such services on reasonable basis.
6. That the Accident Board should make arrangements with which the insurance companies should cooperate, that any physician whose bill is in dispute may appear before a representative of the Accident Board within a reasonable distance of his home.
7. That the Accident Board shall provide for medical referees by districts.
8. That fees paid by the companies should not be less than the average minimum fee in the locality in which the service is rendered.
9. That charges up to $50 for major operations are not excessive.
10. That physicians appearing at hearings before the Board shall receive the compensation as provided for under Section 8, Part 3, of the Act.
11. That services rendered by lodge physicians be paid for, provided it is not inconsistent with the rules of the order.
12. That specialists, established and recognized by the profession as such, may receive special rates for their work, provided the case requires special skill.
13. That the ruling previously made by the Accident Board, that "fees should not be charged an injured party whose employer was insured larger than the injured party would be charged were he not insured," should be interpreted to mean that in a given accident the fee paid by the insurance companies for services should not be less than the average minimum fee for similar services in the locality in which said services are rendered.

MISSOURI

St. Louis Leper Escapes Quarantine.—Charles Hartman, declared a leper by the St. Louis Board of Health, has left the leper quarters of the Robert Koch Quarantine Hospital and is believed to be on his way to Mexico.

Exposure of Quacks.—At a meeting of the St. Joseph-Buchanan-Andrew County Medical Society at St. Joseph, October 15, a committee, consisting of Drs. O. G. Gleaves, Pierre I. Leonard and Luther A. Todd, was appointed to make such investigation as is necessary to the exposure of quack physicians, with authority to employ an attorney.

Hospital News.—The new Deaconess Home and Hospital to be erected by the Methodist Episcopal Church in St. Joseph will be five stories in height, and will accommodate five times as many patients as the Ensworth Hospital.——The Sedalia General Hospital was damaged by fire November 11. Five patients were removed from the building and the loss is estimated at $2,000.

Personal.—Dr. John G. Hayden, Kansas City, was operated on recently in Chicago for appendicitis.——The barns of Dr. J. H. Roney and Dr. W. G. Estill, Lawson, were burned, November 10.——Dr. David R. Porter, Kansas City, was the guest of honor at a dinner given by fifty of his friends and pupils to celebrate his seventy-fifth birthday anniversary. Dr. J. F. Binnie served as toastmaster.——Dr. Frank C. Wallace, formerly assistant physician at City Hospital No. 2, St. Joseph, has been appointed city physician of Maryville.——The suit of Dr. H. H. Temple, Kansas City, against the Union Pacific Railway and the Pullman Company, in which $40,000 damages was claimed, has been compromised for $3,500.——Dr. Arthur H. Kelley, Rosendale, was stabbed November 14, and is said to be in a serious condition at the Ensworth Hospital, St. Joseph.——Dr. Amos T. Fisher, Maryville, has been appointed assistant physician at State Hospital, No. 2, St. Joseph.——Dr. Amos A. Freymann, Kansas City, was seriously injured in a collision between motor-cars, November 10.——Dr. George E. Krapf, superintendent of the German Hospital, has resigned and has been succeeded by Dr. C. Emil Simon.——Dr. Charles W. Schery has been appointed assistant city bacteriologist.

NEW YORK

New Officers.—Medical Society of the County of New York, one hundred and eighth annual meeting, November 24: president, Dr. T. Passmore Berens; secretary, Dr. John Van Doren Young, both of New York City.

Open-Air School Nearly Ready.—The new open-air school for Rochester at Cobb's Hill will be ready for occupancy about December 15. The school will accommodate about one hundred pupils, and will have cost about $10,000 when completed and equipped.

Tuberculosis Pavilion Opened.—The east wing of the Children's Tuberculosis Pavilion, Buffalo, has been temporarily fitted up with stoves, electric lights and the necessary plumbing. The building when completed will have cost about $17,000 and will accommodate about forty patients.

Personal.—The health officers of New York State at their thirteenth annual conference, November 20, unanimously indorsed the nomination of Dr. Eugene H. Porter as state health commissioner.——Dr. Daniel W. Nead, medical examiner for the Pennsylvania System, at Buffalo, has been transferred to a similar position at Reading, Pa.——Dr. W. Charles Willis, Central Islip, L. I., has sailed for Europe.——Drs. Ward E. Hunt and J. G. McGillicuddy, Little Falls, have been appointed coroners.

To Make Saratoga Springs a Spa.—The commissioners of the state reservation have sent a letter to all physicians belonging to county medical societies describing the possibilities of Saratoga Springs as a spa and telling of their plans for the development of the State Geyser Park of over 250 acres. An advisory council is being formed to study the conditions at the springs, and suggest methods for the development, and advise with the commission. It is requested that each county medical society elect immediately a corresponding member of the council, who shall receive the reports and bulletins issued by the commission and shall communicate to his society the facts concerning the progress of the work and shall present annually a brief paper on the springs and their uses, and that it communicate the name and address of the corresponding member at once to Dr. Albert Warren Ferris. It is also requested that each county society arrange for a special or regular meeting, to be held in December, at which a brief paper on the springs shall be presented by the corresponding member of the council.

New York City

Harvey Society Lecture.—The next lecture will be given December 13. The speaker will be Dr. Rufus Cole of the Rockefeller Institute for Medical Research, who will speak on "Pneumococcus Infection and Lobar Pneumonia."

German Physicians Elect.—The following officers have been elected by the German Medical Society: president, Dr. Gustav Seeligmann; vice-president, Dr. H. Fischer; recording secretary, Dr. M. Rehling; corresponding secretary, Dr. A. Stein, and treasurer, Dr. S. Breitenfeld.

Raising Money for Cripples.—A ten-day campaign is being conducted by Dr. Burr Burton Mosher for the purpose of raising $100,000 for the House of St. Giles the Cripple, which is the only orthopedic hospital on Long Island. It is announced that up to November 29, $71,246 had been raised.

Fined for Milk Adulteration.—The McDermott Dairy Company has been fined $1,000 for adulterating milk. The defense offered by the company was that the adulteration was done by a discharged driver. The court held that this was not an extenuation of the offense as the company was responsible for the acts of its employees.

New Dispensary Now Ready.—The New York Dispensary has just opened its new building in Spring Street. The original New York Dispensary was founded in 1790 at Five Points and has conducted a clinic for many years in Worth Street. The new building is thoroughly up to date and contains in addition to the usual modern equipment two rooms for the use of the social service department.

Gift to New York Diet Kitchen.—This organization, which dispenses pure milk to infants, has just received a gift of 500 shares of Great Northern stock, valued at $63,000, from Mr. and Mrs. Edward Tuck. The income from this fund will be used in maintaining the diet kitchen at 35 West 139th Street. The association had a deficit of $13,000 at the end of the fiscal year, but now sufficient funds are assured to carry on the work.

Motherhood Not to Bar Teachers.—Justice Seabury has rendered a decision in favor of Mrs. Bridget Peixotto, who had been suspended for absenting herself from school duties for the purpose of bearing a child. The court has expressed the opinion that the Board of Education has no right to dismiss a married teacher who absents herself from school to give birth to a child and that any attempt to do so would be against good morals.

Unite to Fight Tuberculosis.—The social service division of the Free Synagogue, the United Hebrew Charities, and the Montefiore Home have joined forces for the purpose of waging war on tuberculosis. A fund of $20,000 has been subscribed with which to begin work and each of the organizations joining in the work will make a further contribution. The Free Synagogue has pledged $10,000 annually to the work.

Anniversary Meeting.—The section on laryngology and rhinology of the New York Academy of Medicine celebrated its fortieth anniversary November 25. An address was made by Dr. Clinton Wagner of London, England, the founder of the New York Laryngological Society, which later became the laryngological section of the Academy of Medicine. Bryson Delavan made an address and presented the section with a bronze tablet.

Personal.—The will of the late Dr. Charles McBurney, recently filed at Stockbridge, Mass., disposes of the greater part of his effects to his children, but to the New York Physicians' Aid Society is given any rights, claims or demands that the testator may have against it.——Dr. William K. Jacobs has returned from Europe.——Dr. Francis B. Hart, Brooklyn, has been appointed coroner's physician for the Borough of Queens.——Dr. John McAllister is reported to be ill with septicemia, the result of stepping on a rusty nail.

Concealed Cocain Stock.—Through the evidence of a 17-year-old girl, Thomas De Lorenzo, a pugilist, has been arrested for traffic in cocain. Twenty-four packages of cocain were found concealed in a chamber underneath the floor of De Lorenzo's quarters. The evidence shows that three thousand ounces of cocain have been purchased during the last six months. The band of which De Lorenzo is the head paid $15,000 for the drug and sold this amount in small lots for approximately $90,000. The defendant was held in $5,000 bail.

Montefiore Home Dedicated.—The new buildings of the Montefiore Home and Hospital for Chronic Invalids at Gunhill Road and Jerome Avenues, were dedicated November 30. A reception was held in the institution by the president and directors from 11 a. m. to 1 p. m. and from 2 to 5 p. m. The medical department of this beneficent institution was organized by Dr. Simon Baruch in 1884. From its original twenty beds, it has now a capacity of 300 patients. Dr. Baruch served as chief of the medical staff for ten years, as consulting physician from 1894 to 1900 and since that time as honorary consulting physician.

Midwives Must Have Diplomas.—At a meeting of the Board of Health October 14, the following resolution relative to the practice of midwives was passed: *Resolved*, That the rules governing the practice of midwifery in the City of New York adopted by the Board of Health Nov. 8, 1907, be and the same are hereby amended so as to read as follows; the same to take effect on and after the 1st day of January, 1914: The applicant must be 21 years of age or upward, of good moral character, and able to read and write. She must be clean and constantly show evidence in general appearance of habits of cleanliness. The applicant must also present a diploma or certificate showing that she is a graduate of a school for midwives registered by the Board of Health of the City of New York as maintaining a satisfactory standard of preparation, instruction, and course of study, but the requirement of a diploma shall not apply to any person who is now or has been hitherto authorized to practice midwifery by the said board.

Reorganization of the Department of Health.—At a meeting of the Board of Health, Oct. 28, 1913, resolutions were adopted effecting a reorganization of the department by which divisions, which started as insignificant items in the work of the department and have grown to importance, become bureaus. The department now consists of the following bureaus: Bureau of general administration, under Eugene W. Scheffer; sanitary bureau, under the sanitary superintendent; bureau of infectious diseases, under Dr. John S. Billings; bureau of child hygiene, under Dr. S. Josephine Baker; bureau of hospitals, under Dr. J. R. Wilson; bureau of laboratories, under Dr. William H. Park; bureau of food inspection, under Dr. Marion B. McMillan; bureau of records, under Dr. William H. Guilfoy. The bureau of infectious diseases will now include the division of contagious diseases, tuberculosis, venereal diseases, veterinary diseases, institution inspection, typhoid fever, nurses and the diagnosis laboratory. The bureau of child hygiene will include midwife and foundling inspection, institutions and day nurseries, medical inspection of schools, employment certificates, infants' milk stations and children's clinics. The bureau of food inspection will comprise the inspection of meats, fish, vegetables and drugs, city and country milk inspection and the inspection of pasteurizing plants. The chief executives of the bureaus will be required to report directly to the commissioner of health and will be held responsible for the conduct of the work and the efficiency of the employes under their direction.

NORTH CAROLINA

Personal.—Dr. P. B. Orr has been elected health officer of the recently incorporated city of West Asheville.——Dr. Thomas S. Burbank, Wilmington, is reported to be ill with disease of the kidneys.

Fire Damages Medical Building.—The early morning fire in the rear section of the Judson Payne Leonard Medical Building at Shaw University, Raleigh, November 8, did damage amounting to about $5,000.

County Bulletin.—The health authorities of Sampson County have issued the first number of the Sampson County Health Bulletin. Dr. Cooper, the county physician, is the director, and the bulletin is intended to teach the prime importance of sanitation.

Monument to Dr. Kerr Unveiled.—On November 13, the monument erected to Dr. Charles Stevens Kerr by his friends and neighbors at Kerr, was unveiled. Eulogistic addresses were made by Mr. W. S. Robinson, Mr. George R. Ward and Dr. John M. Faison.

Get-Together Meeting.—A joint meeting of the councilors of the Medical Society of the State of North Carolina and the State Board of Health was held in Greensboro, November 19, to study methods and devise plans to render more efficient the work of the county medical societies and further to conserve in every way possible the public health interests of the state.

Hospital Notes.—The Corcoran Hotel property, Durham, has been leased by the incorporators of Mercy Hospital, who announce that the institution will open January 1.——The corner-stone of the Wilson Hospital and Tuberculosis Home for Negroes was laid with appropriate ceremonies November 27. The principal address was made by W. S. Rankin, secretary of the city Board of Health.——The Red Cross Society of Wilmington announces the completion and opening on December 1 of its sanatorium for tuberculosis, located 2 miles below Wilmington. The institution can accommodate forty patients.

PENNSYLVANIA

New Officers.—*Franklin County Medical Association at Chambersburg, November 18:* president, Dr. A. B. Sollenberger, Waynesboro; secretary, Dr. John J. Coffman, Scotland.

Personal.—Dr. Frederick E. McN. Howell has been appointed chairman and Dr. Daniel N. Bertolet, a member of the committee on health and sanitation of the Reading Chamber of Commerce, which has been established to take up the matter of housing and sanitary conditions.

Plan for Care of Dependents.—A constructive program for the care and prevention of dependents in Pennsylvania was announced November 28, by Dr. Charles H. Frazier, president of the Public Charity Association. These plans include a central directing body, such as the State Board of Charities. The recent conference held between the representatives of the State Board of Charities and the Public Charities Association, under the auspices of Governor Tener, was to further the cooperation of the state local authorities in Pennsylvania, for the purpose of making the plans operative and successful. Dr. Frazier discussed the possibilities of cooperation in the care and prevention of tuberculosis.

Honey Impure.—Judge Holland, of the United States District Court, is hearing testimony in a food case considered most important by the government because the outcome may change the present method of labeling honey. The question to be determined is whether or not six cases of honey seized by the federal food inspectors in this city shall be ordered destroyed on the grounds of being adulterated. According to William H. Jenkins, in charge of the food inspection bureau, the honey was shipped by the Excelsior Honey Company, of New York, 1912. It was seized before being delivered, after samples analyzed by government chemists indicated it contained 60 per cent. of added invert sugar.

Philadelphia

Recognizes Long Service.—In recognition of his thirty-three years of service to the city as a health officer, Capt. Charles F. Kennedy, first and only disinfector in the employ of the city in 1880, was given a banquet and reception by about fifty employees of the Bureau of Health, November 20.

Baby-Saving Show Opened.—The Northern Liberties Baby-Saving Show was opened December 3, in the Friends' Neighborhood Guild, Fourth and Green Streets. The show is under the auspices of the Child Federation. It is estimated that 25 per cent. of the mortality in that part of the city is infantile and that the majority of these deaths are preventable.

Mütter Lecture.—The Mütter lecture on Surgical Pathology will be delivered by Dr. Robert C. Coffey, Portland, Ore., in the Thompson Hall of the College of Physicians of Philadelphia, at 8:30 p. m., December 12, on "Chronic Constipation Considered From the Embryologic Anatomical and Experimental Standpoints," illustrated by lantern slides and drawings. After the lecture a reception will be given to Dr. Coffey at the Hotel Rittenhouse.

Seizure of Impure Food.—On November 20, as a result of the work by state and city veterinarians and food inspectors, between 11,000 and 12,000 pounds of fish, game, and poultry were condemned as unfit for food and sent to local fertilizing works, where it was destroyed. The condition of the food products was blamed directly on the abnormally warm weather by the officials. The quantity seized represented shipments from Southern and Western points, valued at several thousand dollars.

Baby Improvement Show.—Almost 600 babies have been registered in the baby improvement contest being held by the Child Federation at their headquarters, Tenth and Bainbridge Streets. Babies showing the greatest improvement in two months will receive prizes of $25.00, $15.00 and $10.00. Babies when entered are given a physical examination, which is repeated the last Monday of the contest, and careful records are made of all data revealed. Normal infants between the age of 1 month and 2 years are eligible. The purpose of the contest is to stimulate greater interest in the welfare of infants and spread hygienic knowledge.

Personal.—Dr. J. Solis Cohen has been elected an honorary member of the Philadelphia Laryngological Society.——Dr. Arthur J. Davidson has been appointed orthopedic surgeon to the Jewish Hospital.——Dr. Charles H. Frazier had conferred on him the honorary degree of Doctor of Science, by Hobart College, Geneva, N. Y., recently.——Dr. Frances J. Heath, who is to teach surgery and anatomy in the Union Medical College, Peking, China, has started for her post of duty.——Dr. William Campbell Posey, who has been seriously ill with pneumonia, is very much better and his complete recovery is expected.——Dr. D. Braden Kyle is seriously ill with pneumonia at his home.

For Greater Efficiency in Hospitals.—A committee of six members of the Philadelphia County Medical Society presented a report, November 26, recommending a system by which it will be possible to increase the efficiency of hospitals in this city, reduce the cost of maintenance and render a greater aid in the prevention of sickness. The members of this committee are: Drs. Edward Martin, Charles Penrose, George E. De Schweinitz, Wilmer Krusen, John D. McClean, Joseph F. Neff, and Robert LeComte. The plan suggested includes a development of community system for hospital social service. The appointment of efficiency at each hospital, the use of uniform methods of accounting, a preparation of statistics, a development of "follow-up" work, by which the progress of patients toward complete recovery may be known after they have left the hospital. There are nineteen hospitals in this city which have one or more social service workers employed, and instead of increasing the expenditure of the hospital this department makes it possible to discharge a patient at the beginning of convalescence. The report further says: "A hospital is efficient if it performs its functions—the care of the sick, the prevention of disease, the research work and the education of doctors, nurses and the public—thoroughly and with the least possible waste of labor, materials and money. We believe that if the hospitals of Philadelphia should make a united effort to discover and eliminate all of the various forms of preventable waste which undoubtedly exist at the present time it would not only reduce the cost, but greatly increase the efficiency of these institutions." Cooperation of the State Board of Charities is urged, especially in getting hospitals to adopt the uniform system of accounting which has been prepared for the committee by W. B. Hadley, chief accountant in the office of the city controller.

GENERAL

Seaboard Physicians to Meet.—The annual meeting of the Seaboard Medical Association, composed of members of the profession in North Carolina and Virginia, will hold its annual meeting in Norfolk, Va., December 9 to 12, under the presidency of Dr. J. E. Rawls, Suffolk.

Duluth and Superior Physicians Meet.—At the *Interurban Academy of Medicine* held at Superior, November 19, Dr. C. D. Conkey, Superior, was elected president; Dr. C. F. McComb, Duluth, vice-president; Dr. Andres G. Hoyde, Superior, secretary-treasurer, and Dr. Homer Collins, Duluth, censor.

Southern Medical Women Organize.—The Association of Southern Medical Women, dedicated to the furtherance of public health campaigns in the South, was inaugurated, November 18, at Lexington, Ky., as an auxiliary to the Southern Medical Society. Dr. Lillian H. South, Bowling Green, Ky., was elected president and Dr. L. Rosa C. Gantt, Spartanburg, S. C., secretary-treasurer.

Death Abroad.—In addition to the deaths noted by our correspondent, the following is reported: Edward Nettleship, F.R.C.S., Eng, 1870; F.R.S.; eminent as an ophthalmologist; consulting surgeon to the Royal London Ophthalmic Hospital; consulting ophthalmic surgeon to St. Thomas Hospital; one of the founders, surgical secretary and president of the Ophthalmological Society of the United Kingdom; died at his home in Hindhead, October 30, aged 68.

Bubonic Plague and Yellow Fever.—Consul Baker at Guayaquil, Ecuador, reported to the state department under date of

November 6, that there were 112 cases of bubonic plague in Guayaquil and that yellow fever was on the increase. Under date of November 13, fifty-two additional cases were reported at that point.——Under date of November 12, it was reported that the California State Board of Health had ordered the director of the State Hygienic Laboratory to Kennett, in that state, to investigate two cases of reported bubonic plague.

Bequests and Donations.—The following bequests and donations have recently been announced:

West Philadelphia Hospital, $5,000 by the will of Emily Sheetz, for the establishment of an emergency free bed.

Germantown Hospital, $3,000 by the will of Isabella T. Camblos.

Mercy Hospital, Kansas City, Mo., a donation of $25,000 by J. L. Loose, contingent on the securing of at least $200,000 to be used as a permanent endowment fund for new buildings.

Good Shepherd Hospital for the Insane, Quebec, $20,000; Jeffrey Hale Hospital $10,000 by the will of Hon. Sharples, Quebec.

St. Michael's Hospital, Toronto, $5,776; Hospital for Incurables $2,000, Hospital for Sick Children $3,000; Toronto General Hospital, $5,000 by the will of Eugene O'Keefe, Toronto.

Meeting of the Physicians of the South.—The Southern Medical Association held its seventh annual meeting in Lexington, Ky., November 18 to 20, under the presidency of Dr. Frank A. Jones, Memphis, and elected the following officers: president, Dr. Stuart McGuire, Richmond, Va.; vice-presidents, Dr. J. W. Jervey, Greenville, S. C., and F. H. Clarke, Lexington, Ky.; secretary-treasurer, Dr. Seale Harris, Mobile, Ala. (reelected). Richmond, Va., was selected as the place of meeting for 1914. The following section officers were appointed: Eye, Ear, Nose and Throat—Dr. Homer Du Puy, New Orleans, chairman; Dr. S. Nelson, Memphis, secretary; Hygiene and Preventive Medicine—Dr. R. M. Cunningham, Ensley, Ala., chairman; Dr. W. S. Leathers, University, Miss., secretary.

The American Association of Immunologists.—This society was organized June 15 at Minneapolis, Minn., with forty-one charter members, all of whom have been pupils of Sir Almroth E. Wright of London. The objects of the society are: "To unite the physicians of the United States and Canada who are engaged in the scientific study of immunology and bacterial therapy. To study the problems of immunology, and to promote by its concerted efforts scientific research in this department. To spread a correct knowledge of vaccine therapy and immunology among general practitioners." The officers temporarily chosen are: president, Dr. Gerald B. Webb, Colorado Springs, Colo.; vice-president, Dr. George W. Ross, Toronto, Canada; treasurer, Dr. Willard J. Stone, Toledo, Ohio; secretary, Dr. Martin J. Synnott, Montclair, N. J., and council, Drs. A. Parker Hitchens, Glenolden, Pa.; Oscar Berghausen, Cincinnati; J. E. Robinson, Temple, Tex.; Campbell Laidlaw, Ottawa, Canada, and Henry L. Ulrich, Minneapolis. The first annual meeting of the society will be held June 1, 1914, at Atlantic City, N. J.

Infectious Diseases.—During the fall the various infectious diseases have been very prevalent throughout the country, in some places small epidemics occurring. Cases of diphtheria and small-pox have perhaps occurred in greatest numbers. For the last week in November diphtheria was reported, among others, from the following places: Hamilton, O., 232 cases; Duluth, Minn., 40 cases, traced to a dairy; La Rue, O.; Hastings, Neb., where one school was closed; Suffield, Conn.; Worcester, Mass.; Antietam Furnace, Md., school closed; La Crosse, Wis., school closed; Detroit, where an antitoxin campaign was urged by the health board; Brenham, Tex., one county school closed; Greencastle, Ind.; Warsaw, Ind.; Waddy, Ky.; St. Paul, Minn., 140 cases during November; one small epidemic was traced to a certain dairy. November 19 the offices of the State Board of Health at Jackson went into voluntary quarantine on account of the discovery of diphtheria infection in the throats of the laboratory staff, caused by the careless sending in of specimens by physicians throughout the state, similarly to the trouble in the state board office in Atlanta, Ga., where a number of cases of the disease occurred, compelling the closing of the office.

Small-pox: At Oklahoma City 12 cases were reported; from Pennsylvania at Johnstown, Altoona, Wilkes-Barre, Reading, Huntington, Bowmanstown and Philadelphia; Milwaukee, Wis., where 21 cases were reported; De Pere, Wis.; Kansas City, Mo.; in the jail at Opelika, Ala., court postponed; Salt Lake City, 29 cases; Niagara Falls, two schools closed; Mt. Horeb, Wis., 14 cases; people defied health board order to vaccinate; Norway, Kan., school closed; Chicago, 11 cases occurred in Bernarr McFadden's "Healthatorium," none of whom had been vaccinated; at Joliet an epidemic with 40 cases occurred.

Measles: Riverbank, Cal., 25 cases in the grammar school; Rickardsville, Iowa, schools closed; Walla Walla, Wash., 50 per cent. of pupils afflicted; at Kodiak, Alaska, and the Afognak Islands, 100 natives have died from epidemic measles.

Scarlet Fever: Sunbury, Pa., 55 cases reported; some schools closed; Thurston, N. Y., schools closed; Paducah, Ky., strict quarantine enforced on account of epidemic; Everett and Malden, Mass., pest-house opened to accommodate the patients; 50 cases in Everett and some schools closed; Wapping, Conn.; Lynchburg, Va., quarantine lifted from the Miller Female Orphanage, where 18 cases but no deaths occurred.

Chicken-pox: Twenty cases reported from Topeka; Canton, Ill.; Wilkes-Barre, Pa.; Little Rock, Ark.

Trachoma: Columbus, Ind., 49 cases reported among schoolchildren in the county; Florin, Cal., 6 cases found among Japanese schoolchildren.

CANADA

Personals.—Dr. Herbert J. Patterson, London, England, addressed the Academy of Medicine, Toronto, the evening of the 24th of November, on stomach surgery.——Dr. Oskar Klotz, professor of pathology and bacteriology, University of Pittsburgh, addressed the Academy of Medicine, Toronto, the evening of the 2nd of December, on "The Triple Alliance—Heart, Kidney and Arterial Disease."

Infant Mortality in Montreal.—The infant mortality of Montreal is practically double that of any other city in North America. Montreal with a population of 568,000 had 5,534 infant deaths in 1910, while Toronto with a population of 410,000 had 1,420. In 1912 in Montreal the deaths decreased, numbering 4,835, while in Toronto they increased and amounted to 1,584. The rate per thousand for the three years in Montreal was 9.2, while in Toronto it was 3.6. During the present year up to August 15 there had been registered in Montreal 4,172 infant deaths.

Hospital News.—Toronto is considering establishing two new hospitals to serve the east and west ends of that city, the total cost of both institutions to be about $1,000,000. Sites for both have been selected and approved by Dr. Bruce Smith, inspector of hospitals for Ontario and Dr. Chas. J. C. O. Hastings, medical officer of health for Toronto. It is likely that the city will submit by-laws at the coming municipal elections to provide $250,000 as a start for each institution. Dr. Bruce Smith says Toronto needs hospital accommodation for at least 500 more beds.

At the annual meeting of the medical staff and the board of governors of the Western Hospital, Toronto, the medical staff vigorously protested against appointments of three chiefs of clinics made without their consent. Recently a fine new hospital building was completed and arrangements made whereby medical students from the medical department of the University of Toronto would receive clinical instruction. The university authorities required three services of 100 beds each, and it was over the appointment of the heads of these services that the trouble arose. The following officers were elected: Dean of the medical staff, Dr. Elias Clouse; secretary, Dr. Frank Trebilcock; medical superintendent, Dr. James McCullough.——During the year ended September 30, 1,243 patients were treated in the Montreal Maternity Hospital, an increase of 250 patients over the previous year. The benefits of the institution were bestowed on twenty-five nationalities. The staff of nurses now number twenty-one.

LONDON LETTER

(From Our Regular Correspondent)

London, Nov. 15, 1913.

The London Medico-Psychological Clinic

Excepting at Liverpool there is no clinic in England for the treatment of incipient mental disease. One has just been inaugurated in London termed the London Medico-Psychological Clinic. At the inaugural meeting Lord Sandwich, who was evidently chosen to preside in consequence of his interest in the subject, gave an address in which he "put his foot in it" with a vengeance. Having expressed his belief in the immense power exercised by the mind over the body he said that although he knew nothing of medical science he had had great experience in healing. During the South African War he received sixty officers into his country house and there had never been a doctor or nurse in the place. He himself had acted in both capacities toward his guests and had been both surprised and gratified by his success. There were few serious maladies that he had not treated, and he had never failed to relieve persons in the agonies of pain. He had attended people in palaces, in cottages, in hospitals and in homes. His patients had included a Hindu monk in his monastery, a Mohammedan in his mosque and a Hindu princess who had traveled 500 miles to see him. He had often been asked to explain his power, but he had nothing to explain. He could only say what happened. He was convinced, however, that many other persons possessed similar power, if not to the same extent at least in lesser degree. In the proposed clinic there would be an opportunity for them to exercise it with great usefulness.

Other speakers followed. Miss Constance Long, a woman physician, said that many doctors had successfully practiced psychotherapy, but up to the present there had been no provision for the treatment of the poor. The Medico-Psychological Clinic would supply this and also provide opportunities for investigation of disease. The patients would include persons suffering from depression, insomnia, loss of sensation, the drug habit, morbid attention to bodily ailments, etc. The treatment would consist of persuasion, suggestion, reeducation, psychanalysis, induced sleep and hypnotism. The clinic would not be in opposition to orthodox medicine but supplementary to it, and forces could be joined with medical practitioners in a suitable building. Dr. Spearman, professor of psychology at University College, said there could be no doubt that science would gain from the formation of the new clinic. There was a growing interest in and demand for psychotherapy which could not be disregarded. Some years ago the subject had been treated with derision, but to-day this had ceased, and knowledge had been gained. Dr. Maurice Craig, F.R.C.P., physician for mental diseases and lecturer to Guy's Hospital, a well-known alienist, said that there was no proper provision in England for patients suffering from incipient mental disorder. They were left to struggle on until ready to be admitted into lunatic asylums, though a little timely treatment would have restored them. These unfortunates were by no means always the derelicts of society, but were frequently highly endowed and gifted.

As might be expected, the extraordinary claims of the chairman, a layman, to marvelous healing powers at a meeting in which the cooperation of the profession was necessary, had a sequel. The physicians concerned have written to the press saying that they had been compelled to dissociate themselves from the occult powers claimed by Lord Sandwich, who has terminated his association with the clinic. They add that they profess nothing but ordinary medical knowledge acquired in the ordinary way, and hope that the clinic will attract physicians who wish to learn practical psychotherapy. The whole of the healing art was cradled in superstition, and in the minds of many psychotherapy is still tinged with charlatanism from which the clinic would help to dissociate it.

Tuberculosis among Natives of South Africa

A parallel to the prevalence of tuberculosis among the negroes of the United States seems to be coming into existence in South Africa, where the same race is being brought into contact with European civilization. At the recent meeting of the South African Medical Congress Dr. D. Melville, who has for sixteen years resided in the heart of the "native territories" and acquired considerable knowledge of the manners and customs of the natives, said that deaths from tuberculosis occurred at all ages among the natives, excepting children, and were particularly frequent among young adults. The disease appeared to be responsible for a decline in the native population. A rapid increase of this population was noted in the census of 1904, but was not maintained in 1911, and a further drop would be shown in 1921. In three districts, which he knew well, the census gave the total native population as 81,272 in 1891 and 104,346 in 1904—an increase of 23,074, at the rate of 1,775 per annum. In 1911 the population was 110,358, an increase of 6,012, at the rate of 858 per annum. Thus the rate of increase had fallen by one-half, though during the period referred to the birth-rate had remained stationary. Tuberculosis was undoubtedly on the increase, for on going over the first 3,000 cases he treated in 1897 only 1 per cent. were found to be tuberculous, while the first 3,000 cases treated in 1912 showed 40 per cent. of tuberculosis. Of the tuberculous affections lung disease was easily first and glandular disease second, while affections of bones and joints were not numerous. The natives could be divided into two great classes—the red or blanket Kaffir, and the dressed Kaffir who adopted European clothing. In 1897 tuberculosis was much less prevalent in the blanket Kaffir, and this still held good but not to the same degree. In the overcrowded, dark, dirty and damp huts, never ventilated and never open to the sunlight, the disease was propagated. Where could the bacillus find better conditions for growth? Natives were great smokers, spit freely on the floors, and one pipe was passed from one to another.

The Bacteriology of Food-Poisoning

In a report to the local government board Dr. Savage communicated some important observations on "ptomain poisoning," as it used to be called, but which modern investigation is showing to be due to bacterial infection. Dr. Savage points out that the bacteria concerned in food infections can be included roughly in three groups: (*a*) the Gaertner group of bacilli, (*b*) non-Gaertner aerobic bacilli, such as *Bacillus proteus* and *B. coli*, and (*c*) *B. botulinus*. In the majority of recorded outbreaks of food-poisoning in which fatal cases have occurred, one or other of the Gaertner group of bacilli seems to have been the infecting organism. The Gaertner group of bacilli is a subgroup of the large coli-typhoid group, its members occupying an intermediate position between the chemically active coli group and the chemically inert typhoid group, and consisting of (1) *B. enteritidis*, which includes not only many of the Gaertner bacilli isolated in cases of food poisoning but also many of the strains of *B. typhi murium*; (2) *B. suipestifer*, with which one must associate some of the *B. typhi murium* strains, probably *B. psittacosis*, and (3) *B. paratyphosus* B. Sausage and ham are the commonest two sources of botulism. From the anaerobic character of the bacillus and the fact that outbreaks of botulism have never followed the eating of food in a fresh state, botulism must be produced by an invasion of food by *B. botulinus* only when suitable anaerobic conditions are provided, for example, when a ham is stored at the bottom of a pickling cask and entirely covered by the pickling solution. Van Ermengem states that the disease has never occurred when the food has been properly cooked as *B. botulinus* and its toxins are easily destroyed by heating. The *B. botulinus* will not grow in mediums containing more than 6 per cent. of sodium chlorid and it is unlikely, therefore, that any meat would develop *B. botulinus*, even if stored under anaerobic conditions, if a pickling solution containing 15 per cent. of salt were used.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Nov. 13, 1913.

Centenary of the Discovery of Iodin

November 9 the centenary of the discovery of iodin was celebrated. It was in November, 1813, that Bernard Courtois, who was born Feb. 15, 1777, at Dijon, read before the Académie des sciences a note entitled "Discovery of a New Substance in Sea-Wrack." Many scientific and medical men of prominence went to Dijon to take part in the celebration. A commemorative tablet was placed on the house in which Bernard Courtois was born. Afterward a session was held in the hall of the Académie de Dijon. Camille Matignon, professor of inorganic chemistry at the College of France, read an interesting paper on the discovery of iodin. During the troublous times of the eighteenth century the problem of nitrogen, or rather of potassium nitrate, demanded the attention of nations and of chemists. The old gunpowder was a mixture of potassium nitrate, sulphur and carbon, but the potassium nitrate constituted three-fourths of the mixture. The natural supply of saltpeter was insufficient for the needs of the various nations. A *salpêtrière* (manufactory of saltpeter) was founded at Dijon, and in the preparation of the saltpeter Bernard Courtois noted, during the evaporation of the solution of sodium nitrate leached from the ashes of marine plants, that the copper caldrons used for the operation soon became perforated. In trying to find out the cause, he found that the copper combined with a substance the nature of which was unknown to him. He was able to isolate from the mother-waters of sea-wrack soda a new substance to which Gay-Lussac gave the name of "iodin." The first therapeutic application of iodin was made by Coindet of Geneva in 1820. He published a memoir on the discovery of a new remedy for goiter. From 1830 to 1840 the iodin industry was founded. More than twelve hundred families along the shore of the Cottentin and of Brittany were occupied in gathering, drying, grinding and burning sea-weeds. Later iodin was obtained from the saltpeter of Chile, and the rich layers of potassium and bromin salts from Stassfürt. To-day the greatest part of the iodin consumed comes from Chile. While in 1875 the production of iodin throughout the world did not exceed 250,000 kg., it had risen in 1900 to 590,000 kg., and of late amounts to about 450,000 kg. France produces only about 59,000 kg.

Dangerous Colon Reactions

November 11, Dr. Albert Mathieu, physician of the hospitals of Paris, read before the Académie de médecine a paper on colic reactions. Under this name he designates reflex phenomena of colonic and sigmoidorectal origin which, under their most simple aspect, take the form of nauseas, vomitings, vertigoes or fainting, occurring among constipated persons at the time of an evacuation of the bowels after a period of several days of fecal retention. In some cases the complications occur at each such crisis, and sometimes are serious. Thus, in a young girl of 23 the vomiting had caused suspicion of the existence of chronic appendicitis, and the appendix had been removed. Later, the existence of a gastric or duodenal ulcer had been suspected. Moreover, there had been a hematemesis a year before that. One day, after a glycerinated enema, at the very moment of dejection, there occurred abruptly a sharp abdominal pain, vomiting, a serious condition of collapse with cold extremities, facies abdominalis and a rapid filiform pulse, so that a gastric perforation was feared. An exploratory laparotomy performed three hours later showed that there was no such perforation. Only adhesions were found and a duodenal scar, no doubt the results of former ulcers. A gastro-enterostomy was performed. A month later there was a similar crisis following another such dejection. In another case, that of a woman under treatment for chronic colitis, there was a serious collapse following a mucilaginous injection to which zinc oxid and bismuth subgallate were added, according to the formula used by the Mathieu service. The collapse was combated by injections of caffein and lasted three hours.

A Medal Presented to Dr. Roux

To-morrow the twenty-fifth anniversary of the foundation of the Pasteur Institute will be celebrated in the presence of the President of the Republic (THE JOURNAL, Oct. 4, 1913, p. 1307). The pupils and friends of Dr. Roux, director of the institute, have arranged to present him before the celebration with a medal bearing his own portrait.

Honor to the Memory of Dr. Lucas-Championnière

A petition to have a street in Paris named after Dr. Lucas-Championnière has received the signatures of all the members of the Académie de médecine to which it has been presented. The same proposition was made in the municipal council at the last session and was reported on favorably.

A Limitation of the Number of Licenses for the Sale of Liquor

In several departments, the prefects have forbidden giving licenses for the sale of liquors within a certain radius from 200 to 300 meters around churches, schools, cemeteries, barracks and hospitals.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Nov. 14, 1913.

Personal

Professor Doutrelepont of Bonn, who was formerly director of the dermatologic clinic, celebrated, October 26, the fiftieth anniversary of his doctorate.

Professor Morawitz of Freiburg has received a call to Greifswald as director of the medical clinic.

Professor Hotz of Würzburg has gone to Freiburg as successor of the deceased Professor Goldmann.

November 6, Professor Trautmann, department head at the Hygienic Institute of Hamburg, died after a short illness at the age of 38. He had published numerous articles on meat poisoning, plague, meningitis, sterilization of milk, etc.

November 5, Professor Ponfick, formerly manager of the Pathologic Institute at Breslau, died at the age of 69. He was born Nov. 3, 1844, at Frankfort a.M., and after studying at Tübingen, Freiburg and Heidelberg, he became first an assistant of C. O. Weber, the Heidelberg surgeon, and afterward went to Recklinghausen at Würzburg for pathologic study, and came in 1868 to Berlin as assistant to Virchow in the Pathologic Institute. From here he was called to Rostock as regular professor in 1873. His work as professor was interrupted for some time by a journey of investigation which he made to Egypt, Nubia and Palestine as companion of the hereditary grand duke of Mecklenburg. In 1876 he accepted a call to Göttingen, and from there in 1878 he went to Breslau, where he acted as director of the Pathologic Institute until the spring of this year.

He was prominent as a teacher at the Breslau University, and as a scientist he published a large number of important articles. Among these is a series on transfusion, especially on the changes that the blood of a sheep undergoes when introduced into the circulation of man. He also wrote on mushroom poisoning and on the pathology of the liver and pancreas, on myxedema, on middle ear disease in small children, and on actinomycosis, which was at that time a new infectious disease.

The editor of the *Berliner klinische Wochenschrift*, Dr. Hans Kohn, has received the title of professor.

Professor Schuchardt, director of the nerve clinic at Rostock, died November 7, aged 66. He was assistant at the medical clinic at Strasburg under Leyden and Kussmaul, and later became a member of the faculty at Bonn as assistant in the psychiatric clinic. In 1895 he was elected professor of psychiatry at Rostock. His works are concerned with his specialty, particularly with the public care of the insane.

The Eleventh German Conference on Tuberculosis

The eleventh tuberculosis conference under the patronage of the empress began October 22 in the Parliament House in Berlin.

SPECIAL TUBERCULOSIS DISPENSARIES

The first subject discussed was the special tuberculosis dispensaries (Fürsorgestellen für Lungenkranke). In the discussion, much interesting matter was presented with reference to the organization of tuberculosis dispensaries in different countries, such as Sweden, where the care of tuberculosis is far advanced, and Austria, where they are just beginning to lay a greater stress on this question. It was further discussed whether the physician connected with the special dispensary should be at the same time the director. The opinion of the conference inclined to the view that in the smaller places the physician may readily direct the technical matters and the details of the management, but in larger cities it is better to have a special official to take charge of these matters. This is especially favorable in bureaus established by the community where the medical representative of the city government may act at the same time as the chairman of the assistance bureau.

One of the representatives of the Krankenkassen warned against expecting the insurance societies to devote more and larger sums to the prophylaxis of tuberculosis; the Krankenkassen have so many demands of this sort that unless the fees are raised, any additional efforts on their part along this line are scarcely to be thought of.

SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS

Professor Brauer of Hamburg said that in the surgical treatment of tuberculosis a number of measures have given little result. On the other hand, the treatment of pulmonary tuberculosis by rest and compression of the lung tissue has proved successful. This is accomplished either by an artificial pneumothorax or by a plastic operation to reduce the size of the thorax. The simplest measure, when the pleural cavity is free, is the injection of air between the costal pleura and the lung, a measure which of late years has been widely adopted and with a careful selection of patients and proper technic has proved very useful and relatively free from danger. In case of pleural adhesions, various operative measures may be considered: circumscribed depression of the thorax wall, the purpose of which is to promote the already existing tendency of the lung to shrivel; the extensive extrapleural thoracoplasty recommended by Brauer, or the method of intrapleural thoracoplasty (Schede). It is very important that the indications be very strictly followed in regard to the general condition of the patient, complications, and especially the condition of the lung of the other side. Partial collapse and immobilization of the lung may be secured, aside from the Quincke-Spengler partial extrapleural thoracoplasty, by the freeing of the adherent apex of the lung. This procedure is especially successful by the method of Tuffier of Paris. He fills the space left by the liberation and depression of the upper lobe by implanting living adipose tissue. The process of Baer of Davos founded on this method attempts to fill the space by the injection of paraffin. This method is somewhat dangerous but may under some circumstances lead to good results. The paralysis of the diaphragm by cutting the nerve immobilizes the lower segments of the lung. Especially as a supplement to extrapleural thoracoplasty, benefit may be derived by this technic, as Sauerbach, Oelecker and others have shown. Brauer said in conclusion that one should not be led to overestimate the value of the method in consequence of the good results in individual cases, and, further, that the careful selection of suitable cases must be emphasized.

Marriages

George Driver Brogaw, M.D., Pilares de Nacozari, Sonora, Mexico, to Miss Margaret Butler of Washington, D. C., November 18.

Wilhelm Ludwig Baum, M.D., to Mrs. Mervyn Winston Lawrence, both of Chicago, in New York City, November 24.

Corbin Jay Decker, M.D., U. S. N. (ret.) Philadelphia, to Miss Katherine Mason of Asheville, N. C., December 3.

Joseph D. Ely, M.D., Hudson, Mich., to Mrs. Ellen Ford Van Buskirk of Fayette, Ohio, at Toledo, November 8.

Arthur Woodward Booth, M.D., Elmira, N. Y., to Miss Jeannette Van Cleef of Ithaca, N. Y., November 19.

Andrew Culloden Panton, M.D., to Mrs. Florence Merges Carlock, both of Portland, Ore., November 15.

Harold T. Allison, M.D., Heppner, Ore., to Miss Olive J. Lockwood of Portland, Ore., November 16.

William Roy Van Duzer, M.D., Pasey, Iowa, to Miss Nora J. Brinton of Stuart, Iowa, November 20.

John Clifton Anthony, M.D., Birmingham, Ala., to Miss Mae Smith of Ozark, Ala., November 19.

Samuel Greenburg, M.D., to Miss Anna Ruth Matzkin, both of Brooklyn, N. Y., November 11.

Harry Troy Evans, M.D., Springfield, Mo., to Miss Edna F. Mann of St. Louis, November 17.

John C. McClenathan, M.D., to Miss Della Barnes, both of Connellsville, Pa., November 24.

Calvin Randolph Marshall, M.D., to Miss Grace Loomis, both of Indianapolis, November 15.

Charles E. Fawcett, M.D., to Mrs. Mabel Slater, both of Stewartville, Minn., November 19.

Olive M. Slate, M.D., Spokane, Wash., and John J. Maeny of Plains, Mont., November 18.

Ephraim Kirkpatrick Findlay, M.D., to Miss Irene Nelson, both of Chicago, October 22.

Deaths

Robert Lee Edwards, M.D. New York University, New York City, 1894; a Fellow of the American Medical Association; formerly assistant in surgery in Cornell Medical College, New York City; later local surgeon of the Atlantic Coast Line Railroad at Darlington, S. C.; for the last six years a resident of Richmond, Va.; owner and physician in charge of the Southern Sanitarium; ophthalmologist, otologist and laryngologist to the Johnston Willis Sanitarium; died at his home in Richmond, November 12, from heart disease, aged 42.

Charles Mayrant Rees, M.D. Medical College of the State of South Carolina, Charleston, 1887; a Fellow of the American Medical Association; formerly professor of gynecology and obstetrics in the Charleston Medical School; professor of general and clinical surgery in his alma mater; first lieutenant, Medical Reserve Corps, U. S. Army; formerly president of the South Carolina Medical Association; died at his home in Charleston, November 15, aged 51.

William Kendall Newcomb, M.D. Rush Medical College, 1882; a Fellow of the American Medical Association; president of the Illinois State Medical Society in 1911, and once president of the Aesculapian Society of the Wabash Valley; one of the most esteemed and beloved practitioners of Central Illinois; attending physician to the Julia F. Burnham Hospital, Champaign; died at his home, November 25, from pneumonia, aged 56.

Terence Lathrop Carroll, M.D. Albany (N. Y.) Medical College, 1885; a member of the Medical Society of the State of New York; physician to the Albany Penitentiary; attending physician to St. Peter's Hospital and the South End Dispensary; died at his home in Albany, November 9, aged 49. Memorial services in honor of Dr. Carroll were held by the Albany County Medical Society, November 11.

Russell F. Goodwin, M.D. Rush Medical College, 1870; for many years proprietor of a sanatorium in Minneapolis; died in St. Barnabas Hospital in that city, November 15, aged 71, from injuries received two days before when he was struck by an automobile while attempting to board a street car.

Charles Sumner Collins, M.D. Boston University, 1875; formerly a member of the State Board of Health of New Hampshire and State Board of Lunacy and Charity; for several years a member of the state legislature; president of the Nashua Board of Education for twelve years and also president of the Nashua Board of Trade; died at his home, November 16, aged 60.

Douglas Ayres, M.D. Albany (N. Y.) Medical College, 1865; a Fellow of the American Medical Association; once president and first vice-president of the Medical Society of the State of New York; of the Montgomery County Medical Society; for many years president of the Board of Education of Fort Plain, N. Y.; died at his home, November 20, from myocarditis, aged 71.

Lucien LaBland Brainard, M.D. New York Homeopathic Medical College, New York City, 1874; a Fellow of the American Medical Association; for many years a member of the consulting staff of the Faxton Hospital, Utica, N. Y.; vice-president of the Little Falls (N. Y.) National Bank; died suddenly at his home in that city, November 18, from heart disease, aged 60.

Henry Harrison Forline, M.D. Kentucky School of Medicine, Louisville, 1861; Beaumont Hospital Medical College, St. Louis, 1887; formerly surgeon for the Missouri, Kansas and Texas Railroad, and while a resident of Chicago consulting physician to the Western Springs Sanitarium; died at his home in Los Angeles, August 8, from arteriosclerosis, aged 72.

Edward Francis Denner, M.D. College of Physicians and Surgeons, New York City, 1894; a member of the Medical Society of New Jersey and a leading practitioner of Paterson; for several years associate and consulting surgeon to St. Joseph's Hospital; died in that institution, November 14, from typhoid fever, aged 41.

James H. McClelland, M.D. Hahnemann Medical College, Philadelphia, 1867; president of the American Institute of Homeopathy in 1893-1894; professor of surgery in his alma mater in 1876 and 1877; president of the State Board of Health in 1895; died at his home in Pittsburgh, November 13, from heart disease, aged 68.

Zachariah Taylor Miller, M.D. Hahnemann Medical College, Philadelphia, 1877; a veteran of the Civil War; for many years professor of artistic anatomy in the Carnegie Institute of Technology; a member of the staff of the Pittsburgh Homeopathic Hospital; died at his home, November 14, from angina pectoris, aged 66.

Simon James O'Neil, M.D. New York University, New York City, 1887; formerly assistant in the department of obstetrics in his alma mater; for twenty years physician to the Rockaway Institute and House of the Good Shepherd, New York City; died at a hotel in Long Beach, November 14, from heart disease, aged 52.

Henry Clay Beall, M.D. Missouri Medical College, St. Louis, 1880; a Confederate veteran; for thirty-four years a practitioner of Carroll, Mo., and for ten years thereafter a resident of Cortez, Colo.; died at the home of his daughter in DeWitt, Mo., November 7, from pneumonia, aged 70.

James Edwin Ray, M.D. University of Pennsylvania, Philadelphia, 1860; a member of the Colorado State Medical Society; a pioneer practitioner of Crowley County, and a resident of Sugar City for fifty-six years; died in St. Mary's Hospital, Pueblo, November 12, from heart disease, aged 77.

William Shippen, M.D. Medical College of Virginia, Richmond, 1887; a member of the Medical Society of Virginia; for twenty years acting assistant surgeon in the Army; later city physician of Petersburg, Va.; died in the Petersburg Hospital, November 17, aged 52.

Edwin R. Schwinn, M.D. Chicago College of Medicine and Surgery, 1912; of Wheeling, W. Va.; aged 23; who went to Houston, Tex., to take the examination for license to practice medicine in that state, choked and died in that city, November 8, while eating supper.

Edgar Clarence Collins, M.D. Albany (N. Y.) Medical College, 1880; a Fellow of the American Medical Association; proprietor of the Collins Emergency Hospital, Springfield, Mass.; died in that institution, November 14, from angina pectoris, aged 55.

W. Frank Clopton, M.D. Tulane University, New Orleans, 1872; physician, cotton, planter, banker, head of the W. F. Clopton Mercantile Company and president of the police jury of St. Landry Parish, La.; died at his home in Morrow, November 18.

John Kemper, M.D. Illinois Army Board, 1864; Long Island College Hospital, Brooklyn, N. Y., 1867; surgeon of the Twenty-Eighth Illinois Volunteer Infantry during the Civil War; died at his home in Galesburg, Ill., November 28, aged 80.

Charles E. Boult, M.D. University of Buffalo, N. Y., 1892; president of the Board of Education of Honeoye Falls, N. Y., and one of the coroner's physicians of Monroe County; died suddenly at his home, November 7, from heart disease, aged 54.

Albert W. Hendricks, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1871; one of the founders, and for many years surgeon, of the Home for Old Soldiers, Philadelphia; died at the home of his daughter in that city, November 19.

John McIntyre Morrison, M.D. Cooper Medical College, San Francisco, 1895; formerly a practitioner of Richmond and Loyalton, Cal.; died in the Roosevelt Hospital, Berkeley, Cal., November 16, from carcinoma of the stomach, aged 42.

James Randolph Medlock, M.D. Washington University Medical School, St. Louis, 1875; a Fellow of the American Medical Association; died suddenly at his home in Santa Ana, Cal., November 11, from cerebral hemorrhage, aged 76.

Carl Fisch, M.D. Missouri Medical College, St. Louis, 1893; a Fellow of the American Medical Association and a well-known pathologist and bacteriologist of St. Louis; died at his home, November 17, after a long illness, aged 54.

William P. Jones, M.D. Philadelphia University of Medicine and Surgery, 1861; assistant surgeon of the Forty-Second Pennsylvania Volunteer Infantry during the Civil War; died at his home in Philadelphia, November 18, aged 76.

A. J. Clements, M.D. University of Nashville, Tenn., 1858; for many years a practitioner of Glasgow, Ky.; a member of congress from Tennessee during President Lincoln's administration; died November 7, from pneumonia, aged 79.

Philip Francis Xavier Ryan, M.D. College of Physicians and Surgeons, New York City, 1901; for five years a medical examiner for the New York Life Insurance Company; died at his home in New York City, November 17, aged 37.

Edward L. Braun, M.D. Philadelphia College of Medicine and Surgery; for many years an alderman of Pittsburgh, Northside, but for five years a resident of Detroit; died at his home in that city, November 5, aged 58.

Adolph J. Broell, M.D. Northwestern University Medical School, 1892; of Chicago; a Fellow of the American Medical Association; died in the German-American Hospital, Chicago, November 30, from typhoid fever, aged 43.

Frederick R. Hunt, M.D. Northwestern University Medical School, Chicago, 1888; for several years a practitioner of Austin, Chicago; died suddenly at his home in California, August 30, from angina pectoris, aged 52.

Thomas Hanson (license, Ontario, 1891); a graduate of Victoria College, Medical Department, Coburg, Ont., in 1864; when too young to receive a degree; died at his home in Kenora, Ont., September 30, aged 67.

James S. McFarland, M.D. University of Edinburgh, Scotland, 1850; M.R.C.S., Edinburgh, 1850; for four and a half years a surgeon in the English Army; died at his home in Oil City, Pa., November 13, aged 80.

David M. Nottingham, M.D. Hahnemann Medical College, Chicago, 1881; formerly a member of the Michigan State Legislature; died at his home in East Lansing, Mich., November 11, from heart disease, aged 58.

John Harvey Hill, M.D. University of Pennsylvania, Philadelphia, 1867; a veteran of the Civil War; an expert on small-pox; died in his apartment in Baltimore, November 10, from ptomain poisoning, aged 70.

Nelson B. Lafferty, M.D. Starling Medical College, Columbus, Ohio, 1863; a member of the Ohio State Medical Association; a veteran of the Civil War; died at his home in Hillsboro, November 9, aged 73.

John Walter Poston, M.D. Eclectic Medical Institute, Cincinnati, 1873; Memphis Hospital Medical College, 1882; died at his home in Maury City, Tenn., about November 5, aged 63.

Clarence T. Pope, M.D. Louisville (Ky.) Medical College, 1873; for more than forty years a practitioner of Louisville; died at his home, November 13, aged 61.

Paul Newlon, M.D. University Medical College, Kansas City, Mo., 1908; died at his home in Lincoln, Kan., September 25, from typhoid fever, aged 29.

Maria Gutterman Graff Scott, M.D. University of Heidelberg, 1862; said to have been the first woman to practice medicine in Louisville; died at her home, November 13, from arteriosclerosis, aged 73.

Lionel E. Bratton, M.D. Memphis Hospital Medical College, 1896; University of Louisville (Ky.) 1900; a practitioner of Arkansas for twenty-five years; died at his home in Atkins, November 18, aged 49.

James A. Koehler, M.D. Ohio Medical University, Columbus, 1898; a Fellow of the American Medical Association; died at his home in Shelby, Ohio, November 13, from pernicious anemia, aged 40.

Samuel S. Lytle, M.D. University of Iowa, Iowa City, 1878; a pioneer member of the faculty of his alma mater; a veteran of the Civil War; died at his home in Iowa City, November 8, aged 71.

Carl Lyle Hobson, M.D. University of Pennsylvania, Philadelphia, 1910; a member of the Iowa State Medical Society, died at his home in Hampton, Iowa, November 14, from pneumonia, aged 27.

Theophile A. Lafferty, M.D. Michigan College of Medicine and Surgery, Detroit, 1903; of Detroit; died in the psychopathic ward of St. Mary's Hospital in that city, November 12, aged 34.

Charles Ferdinand Durand, M.D. University of Toronto, Ont., 1882; formerly acting medical superintendent of the Municipal Hospital, Buffalo; died in Toronto, November 10, from pneumonia.

Charles Roy Stewart, M.D. University of Nebraska, Lincoln, 1910; of Curtis, Neb.; was crushed under his overturned automobile near Curtis, November 2, and instantly killed, aged 27.

William Pennington Mullin, M.D. Hahnemann Medical College, Philadelphia, 1881; of Chestnut Hill, Philadelphia; died in St. Luke's Hospital in that city, November 14, aged 52.

John B. Longshere, M.D. Pennsylvania Medical College, Gettysburg, 1846; one of the oldest practitioners of New Jersey; died at his home in Camden, November 10, aged 92.

Daniel B. Bobb, M.D. Northwestern University Medical School, Chicago, 1864; for nearly half a century a practitioner of Dakota, Ill.; died at his home, November 14, aged 76.

John Lawson Fleming, M.D. University of Tennessee, Nashville, 1894; of Goodwin, Ark.; died in the Baptist Hospital, Memphis, October 19, from tetanus, aged 47.

Christopher C. Hiatt (license, Indiana, 1897); of Muncie, Ind.; a veteran of the Civil War; died in the Soldiers' Home, Lafayette, Ind., November 8, aged 83.

Carl A. Coburn (license, years of practice, Michigan, 1900); for about 40 years a practitioner of Michigan; died at his home in Homer, November 6, aged 73.

George Bassett Sawtelle, M.D. Hahnemann Medical College, Philadelphia, 1866; died at his home in Malden, Mass., November 14, from heart disease, aged 75.

Ezekiel McNair, M.D. Medical College of Georgia, Augusta, 1876; died at his home in Jeffersonville, Ga., September 16, from cerebral hemorrhage, aged 66.

William Roscoe Dell, M.D. Milwaukee Medical College, 1904; of Marinette, Wis.; died in a sanitarium in Kenosha, November 20, from nephritis, aged 34.

Daniel Whitfield Carroll, M.D. Vanderbilt University, Nashville, 1913; died at his home in Brock, Okla., October 28, from typhoid fever, aged 22.

Lucien B. Abney, M.D. Medical College of Ohio, Cincinnati, 1861; died at his home in Elizaville, Ky., November 6, aged 78.

Denis Morin, M.D. Hahnemann Medical College, Chicago, 1884; died at his home in Chicago, November 14, aged 72.

Thomas Mahon Armstrong, M.D. Victoria University, Coburg, Ont., 1860; died in Lloydtown, Ont., October 5, aged 76.

Edward Roscoe Miller, M.D. Boston University, 1887; died at his home in Leominster, Mass., October 17, aged 54.

Arthur Marks, M.D. Toledo (Ohio) Medical College, 1910; died at his home in Toledo, October 18, aged 31.

Hiram Raleigh Kennedy, M.D. University of Louisville, 1880; died at his home in Green Hill, Ala., October 8.

Edward J. Fischer, M.D. Rush Medical College, 1880; died at his home in Chicago, November 7, aged 65.

George William Spears, M.D. Boston University, 1876; died at his home in Boston, October 30.

Frank G. Kimbrough, M.D. University of Alabama, Mobile, 1890; died at his home in Salado, Tex., November 7.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE LACTIC ACID FERMENT PREPARATIONS IN N. N. R.

Report of the Council on Pharmacy and Chemistry

The following report on the quality of the market-supply of the lactic acid ferment preparations described in New and Nonofficial Remedies has been authorized for publication.

W. A. Puckner, Secretary.

The frequently made assertions that the lactic acid ferment preparations on the market are worthless made it important to determine the quality of those admitted to New and Nonofficial Remedies. A control of these products appeared all the more desirable because past examinations of the market-supply showed these preparations to be most unreliable (The Journal Jan. 30, 1909, p. 372), and because their very nature makes deterioration likely.

Orders for one package of each of the lactic acid ferment preparations admitted to New and Nonofficial Remedies were therefore sent to three prescription pharmacists—one each in Chicago, Detroit and Indianapolis—with the request to take these from stock or to purchase them in the regular way. Also, specimens were ordered direct from the manufacturer.

None of the pharmacists could supply either bacillary milk or lactampoules. In answer to an inquiry the manufacturer states that so far these products are supplied direct only. One pharmacist sent a specimen of the Fairchild Culture of Bacillus Bulgaricus, and as this product had been sent to the council for inclusion with New and Nonofficial Remedies this specimen, and one sent by the manufacturer, were also included in the examination. Altogether, the following specimens were sent to the council's expert:

Fairchild Culture of Bacillus Bulgaricus, Fairchild Bros. & Foster. One specimen from manufacturer and one from pharmacist.

Lactic bacillary tablets, Fairchild Bros. & Foster. One specimen from manufacturer and three from pharmacists.

Lactampoules, Fairchild Bros. & Foster. One specimen from manufacturer.

Bacillary milk, Fairchild Bros. & Foster. One specimen from manufacturer.

Bulgara tablets, Hynson, Westcott & Co. Two specimens from manufacturer and three from pharmacists.

Massolin, Schieffelin & Co. One specimen from manufacturer and two from pharmacists.

The following is the result of the investigation:

1. Preparations of Fairchild Bros. & Foster.

The Fairchild Culture of Bacillus Bulgaricus. Two samples were examined. These were both pure cultures and the bacilli were in good viable condition. The reactions on litmus-milk were typical. Sterilized milk coagulated promptly in less than twenty-four hours, forming a good, smooth, typical coagulum. Microscopic examination of the original culture, and the milk inoculated with the original culture, showed Bulgarian bacilli in pure culture.

The Fairchild lactic bacillary tablets. Four specimens were examined. The bacilli were not in so viable a condition as in the liquid culture. They worked more slowly and a few other bacteria got in, no doubt owing to lodgment on the tablets. Four tablets (not crushed) did not curdle sterile milk after forty-eight hours. In litmus-milk only slight acidity was developed after forty-eight hours. Microscopic examination of this litmus-milk, however, showed only Bulgarian bacilli, although relatively few in number.

Fairchild's lactampoules. These showed the same reactions as the Culture of Bacillus Bulgaricus. Milk was promptly coagulated. Acid formation and coagulation in litmus-milk were typical. Microscopic examination showed the bacilli in pure culture.

Fairchild's bacillary milk. One sample was examined. It had the typical taste, consistency, etc., produced by Bulgarian bacilli in milk. Microscopic examination showed Bulgarian bacilli in pure culture, and inoculation of sterile milk produced typical coagulum, taste and appearance.

2. Preparation of Hynson, Westcott & Co., Bulgara Tablets.

Five original packages of these tablets were examined. The tablets contained pure cultures of Bulgarian bacilli as shown by microscopic examination. In litmus-milk typical curd and acid reactions were produced. Inoculations into sterile milk produced typical coagulum, with very little whey and characteristic taste and appearance. The action was somewhat slower, however, than is produced by liquid cultures. All five samples acted exactly alike.

3. Massolin, prepared by Lederle Laboratories and marketed by Schieffelin & Co.

Three samples of Massolin were examined. They contained pure cultures of Bulgarian bacilli in liquid form. The action was very prompt, more so than any of the other samples of commercial articles examined. Litmus-milk curdled and was acidified in typical fashion. Microscopic examination showed the bacilli to be in pure culture.

Explanation: Typical coagulum produced by Bulgarian bacilli should be smooth, with little or no whey. In litmus-milk the litmus is decolorized, excepting a ring at the top, which is intensely red. Most races produce practically no whey, although certain races produce some. There should never be much whey.

This report shows that while the market-supply—at least that examined in 1909—was highly contaminated, the products described in New and Nonofficial Remedies without exception contain only the *Bacillus bulgaricus*. Further, while all products containing living bacteria are bound to deteriorate, the preparations examined were in viable condition, though, as was to be expected, liquid cultures were more active than the tablet preparations.

In this connection it should be pointed out that besides placing an expiring date on each package, the manufacturers of these products are making every effort to insure the dispensing of reliable products when they are ordered by physicians. These manufacturers have urged pharmacists to keep the lactic acid preparations in ice-boxes or refrigerators, to purchase only a limited supply and in other ways to give special attention to their dispensing as directly as possible from the laboratories of the manufacturers. Physicians should examine the date on the label to be sure the preparation is not too old.

WHAT'S THE MATTER WITH ILLINOIS?

The *Illinois Medical Journal* has come tumbling down the ladder of progress and joined the ranks of the obstructionists. The number of advertising pages have increased accordingly. But what will the 5,000 members, the large majority of whom, we are convinced, stand for the principle that the State Association and its publications shall uphold the standards of organized medicine, including the rules of the Council on Pharmacy and Chemistry governing advertisements, think of the backward step which their journal has forced them into?

Perhaps there is no more pitiable spectacle in the battle of life than lowering your standard and acknowledging defeat after exhausting all your resources in maintaining a principle. There is no disgrace attached to the conclusion of an issue honestly fought, but when a leader deliberately surrenders his people to the opposing forces while still well armed and eager for battle, he is guilty of a treasonable act and ought to be dealt with accordingly. The *Illinois Medical Journal* until very recently stood for the principles of our organization and its pages were free from objectionable advertisements. With the change in management (it has no editor) comes a disgraceful acknowledgment that it will accept and publish advertisements of articles irrespective of the findings of the Council on Pharmacy and Chemistry concerning the honesty and reliability of those articles. Will the Illinois State Medical Association permit its journal to be prostituted in this disgraceful manner after fighting for years to be consistent, respectable and ethical?—*The Journal of the Missouri State Medical Association, November, 1913.*

SANATOGEN

A Restatement of the Case Against This Product

The case against Sanatogen has been pretty plainly given at different times in The Journal,[1] but the sale of the stuff goes on—thanks to the power of advertising. One criticism that has been made of this patent medicine is the exorbitant price charged for it. This objection, although but an incidental one, is the one that apparently appeals to the layman more strongly than the much more serious criticism, fraud in exploitation. You arrest the attention of the average man when you appeal to his purse; he resents paying an exorbitant price for anything. This probably accounts for the fact that this particular criticism has apparently hurt the sale of Sanatogen to a greater degree than the more serious objections made to the preparation. This also accounts, doubtless, for the fact that the attempts to answer The Journal's criticisms, by those who are selling Sanatogen, have been largely devoted to the one point—its outrageously high price.

The fundamental objection to Sanatogen is not its high price, but the attempt to ascribe to a mixture of casein and glycerophosphates powers not possessed by these ingredients—in other words, the misleading and fraudulent claims made for it. Even if it were sold at cost price, the stuff, as at present advertised, would still be a fraud. The nub of the whole matter is: The claims made for Sanatogen are unwarranted, misleading and fraudulent.

SOME FRAUDULENT CLAIMS

The constituents of Sanatogen are casein and sodium glycerophosphate. These two very ordinary substances possess, so the Sanatogen people would have us believe, peculiar properties when they are brought together in chemical combination. Sanatogen, they claim, *is* a chemical combination of these constituents. The claim may be a good "selling-point," but it cannot be, and is not, seriously taken by chemists. But even supposing, for the sake of argument, that sodium glycerophosphate and casein could be combined, there is not a scintilla of evidence to show that such a combination could survive the destructive influence of digestion and be absorbed. Whether Sanatogen is a chemical combination of casein and sodium glycerophosphate or a mere mechanical mixture of these two substances is really immaterial. In either case, it would be separated into its constituent parts by the digestive juices and would have the properties of sodium glycerophosphate and casein, and nothing more.

Remembering this, let us examine once more some of the claims made for this patent medicine:

> "Sanatogen is a nerve and tissue food for which the brain, spinal cord and the nerves have a special predilection."
>
> ". . . practically identical with the main ingredient of nerve and muscle cells. . . ."
>
> "Sanatogen stands pre-eminent in its power to feed the nerve centers, to promote healthy digestion, to give strength and endurance to the entire system."
>
> ". . . food for tired nerves. . . ."
>
> ". . . a rational, scientific nerve-food."

To the physiologist, the term "nerve-food" is an absurdity. The processes of digestion reduce the albuminous substances (proteins, such as casein) of the food to simpler forms. This is true no matter what may be their source. Whether the proteins are derived from the gluten of wheat, the casein of milk or the albumin of egg, one will "feed the nerves" just as well as the other. And Sanatogen "feeds the nerves" no more than, in fact not as much as, do bread and meat and eggs. Of course, the casein in Sanatogen has food-value, but so has ordinary casein—cottage cheese, "pot cheese," or the German *schmierkäse*, for instance—and it is both false and fraudulent to claim for the casein in Sanatogen any greater nutritive value than that possessed by the casein in ordinary milk. To pretend that there are wonderful properties in the protein of Sanatogen when just as good protein can be purchased (for much less money) from the milkman, is to perpetrate a fraud on the purchaser. Here are some more claims:

> ". . . marvelous revitalizer of nerve health."
>
> ". . . Sanatogen has positive reconstructive force in neurasthenia."
>
> "If You Need New Strength and Vitality You should at once get acquainted with Sanatogen."

Strangely like the "lost manhood" advertisements, this last. And this, also:

> ". . . has brought new strength, new vitality and new relish of life to thousands upon thousands who suffered from starved nerves. . . ."
>
> "Countless people . . . have regained fresh health and vigor through the vitalizing and invigorating effects of Sanatogen."

Of course Sanatogen is not sold as a "consumption cure." No such crude claims as these emanate from the skilled advertising agents employed by the Sanatogen people. If they did they could not get space in high-grade magazines! As a preventive of consumption, however, we find:

> "Sanatogen . . . creates new tissue and nerve capital . . . This nerve capital will . . . save the individual from attacks of acute disease. Against tuberculosis it is an excellent investment."

Also, it is a pick-me-up! Thus:

> "Sanatogen promises to pick you up when run down—*it does so.*"

Most people are under the necessity of working for a living. If we are to believe the Sanatogen advertisements, it seems remarkable that the human race has managed to jog along for so many centuries without this product, for we read:

> "It is practically indispensable to all who are unable to take prolonged rest. . . ."

Naturally we do not expect to find the coarse, "free-to-you-my-sister" type of claims in Sanatogen advertisements. Nevertheless:

> "Women . . . find in Sanatogen a genuine sustaining agent."

Finally, we would respectfully direct the attention of those gentlemen of the medical profession who have so far forgotten the dignity of their calling as to give fulsome puffs for this casein-glycerophosphate product to the following claims and ask whether they really subscribe to them:

> ". . . it revivifies the nerves, promoting sleep and helping digestion. . . ."
>
> ". . . it builds up the blood, creating new strength and the power to do and accomplish."
>
> ". . . Sanatogen is a *natural*, healthful food and tonic. ."
>
> ". . . a health and strength giving food and tonic composed of those very elements which make cell and tissue grow."
>
> "Blood and tissues alike hunger for Sanatogen as their concentrated nourishment."
>
> "Sanatogen is the one food tonic that commands your absolute confidence."

How many intelligent physicians really believe that there is the slightest basis of fact for the claims we have quoted? Yet it is by means of these claims that Sanatogen is being foisted on a public that looks to the medical profession for enlightenment and truth. And every quotation in this article is taken from advertising matter issued during the current year, 1913!

In closing, let us reiterate: The objections to Sanatogen are primarily the objection to any fraud. It is being sold under unscientific, misleading and fraudulent claims; moreover, although this is of less importance, the purchaser pays an extraordinary price for a most ordinary product. We believe the time will come when even the artificial stimulus of vast advertising appropriations will be insufficient to overcome the inertia inherent in a product of small merit. When that time comes, Sanatogen will die a natural death. In the meantime, its exploiters are reaping a golden harvest, of which no small part is being divided among publishers, medical and otherwise. And the credulous among the sick and suffering pay the bills!

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[1] The present article and previous ones on this subject are reprinted in a pamphlet entitled "Sanatogen," price 4 cents.

Miscellany

Preservation of Eggs by Refrigeration in Sterile Air.—M. F. Lescardé at the Third International Congress of Refrigeration described a method of preserving eggs by refrigeration in sterile air. The eggs are placed on end in horizontal fillers made of pasteboard and wood; then these fillers are put into tin cases which can be hermetically sealed, each case having a capacity of six fillers containing 160 eggs. The covers of the filled cases are then soldered, and the cases are deposited in an autoclave (digester) which contains twelve cases of 960 eggs each. A vacuum is then made in the autoclave, and a duly proportioned mixture of two gases, carbon dioxid and nitrogen, is injected. This process is very simple because carbon dioxid and nitrogen, in the form of compressed or liquefied gases, are on the market now, so that the manipulation of a few cocks, and the reading of a gauge suffice to produce the proper mixture. The process in the autoclave having been completed, the cases are taken out, hermetically sealed, and stored in cold storage rooms, at a temperature varying between 1 and 2 C. The chief advantages accruing from the preservation of eggs in sterile air are the following: (1) Waste, of such importance in ordinary cold storage, is completely eliminated. (2) The eggs retain a perfectly "fresh" flavor, and consequently they remain excellent for table use even after ten months' storage; they also retain their full weight, because no evaporation is possible in the tin cases. (3) After their removal from the cold storage rooms the eggs remain in perfect condition for a long time, and can be shipped long distances without deterioration; this constitutes a signal superiority over the ordinary cold storage eggs, which deteriorate rapidly after having been taken out of cold storage. The reason for this is simple: the antiseptic air which surrounds them for several months, together with the cold, absolutely destroy all bacteria which may be on the shell of the egg, or in its substance. Deterioration cannot set in except by reinfection, which is produced only by exposure to the air for several weeks. By reason of the above-mentioned advantages, eggs preserved in sterile air find a ready market, and command much higher prices in winter than ordinary cold storage eggs, or even the so-called "fresh" imported eggs. The cost of treatment and preservation, amount to 15 francs per thousand.

The Decidua Has an Internal Secretion.—Gentili gives a detailed description in the *Ann. di Ostet. e Ginecol.*, 1913, xxxv, 257, of experiments with aqueous extracts of the decidua of cows, dogs and human beings. These extracts proved very toxic when injected in small doses into the circulation of rabbits. The extract of rabbit and guinea-pig decidua is also toxic for their own species, though in larger doses. The toxic phenomena are similar to those caused by injection of extracts of the glands which have an internal secretion; but contrary to the action of these extracts, the decidua extract is more toxic for different species. The post-mortem picture in animals dying from the effect of the injection of decidua extract is similar to that of animals dying from fatal doses of extracts of other organs having internal secretion. There was thrombosis of the pulmonary veins, showing the presence of some substance that favors coagulation of the blood within the body. This substance can be neutralized by blood-serum from the same species of animal from which the decidua was taken. In cows, particularly, the greater toxicity was in the early stages of pregnancy. Aside from its toxic effects, decidua extract always has the property of causing a marked fall in blood-pressure. It lessens the force of the systolic wave and produces disturbance in the cardiac and respiratory rhythm. Similar but less pronounced phenomena are produced by extracts of the corpus luteum. It is evident from these results that the conjecture that the decidua has an internal secretion is no longer merely a logical supposition, but has been demonstrated by experiments to be a fact.

Correspondence

Federal Regulation of the Practice of Medicine

To the Editor:—I have read your comments on the Reilly bill (THE JOURNAL, Oct. 25, 1913, p. 1557) to the effect that the Reilly bill is "an impossible proposal," by reason of the fact that in the United States "the regulation of the practice of medicine comes under the police power of the state legislatures and not under that of Congress," and further that "the consideration of any measure by Congress providing for the control of the practice in the states by any federal board is simply a waste of time, as any such measure, even if adopted, would be declared unconstitutional as soon as it came into court." If your views correctly state the powers of Congress, this bill should and will be killed in the committee in charge, notwithstanding the fact that "in every other civilized nation such national control is in effect" and the desirability of such a control is generally recognized in the United States. For myself and other readers of THE JOURNAL to whom I have spoken, none of whom are deeply versed in constitutional law, but who are possessed of an abiding faith in the powers of Congress to legislate for the general welfare of the citizens of the whole United States even to the extent of guarding the health and life of every citizen of the land; and who are imbued with a belief that the preamble of the Constitution of the United States did not in general terms overstate the powers conferred on Congress by the Constitution at the time of its adoption, and with a belief that the powers of Congress were enlarged, and not weakened, by the subsequent amendments, it is difficult to accept the view that Congress has not the power to provide for the common defense and general welfare of all the people in like manner as the states may do for all the people within their borders in the exercise of the so-called police power of the state. Although Congress has not in the past supplemented the powers of the state in all cases with her general power to promote the general welfare of citizens of the United States in the matter of guarding their lives and health, such omissions do not justify the inference that Congress is void of the power to do so. Congress has recently exercised this latent power on more than one occasion. Congress possesses all the powers conferred by the eighth section of the United States Constitution, and, in addition to the powers mentioned in Section 8 of the federal Constitution, Congress may do anything that is not prohibited by the Constitution. These latent powers of Congress have supplemented the police powers of the state in the passage of the federal Food and Drugs Act, generalizing the Pure Food and Drugs Law of the state of Indiana passed in the exercise of the police power of that state a few years previously to the federal law, and the Supreme Court has not annulled the federal law.

Congress has within the last few months passed a national income-tax law supplemental to the income-tax laws of many of the states, and no good lawyer will gainsay the constitutional right of Congress to do so. Neither do I find any decisions by any court of last resort denying Congress the latent power to provide for the general welfare even to safeguarding the lives and health of the citizens of the United States by a congressional regulation of the practice of medicine. Will you not in some future editorial assist your readers to a clearer understanding of the constitutionality of the Reilly bill by citing a few Supreme Court decisions showing that Congress has not the power to promote the general welfare of the people of the United States even to the federal regulation of the practice of medicine? So long as that regulation applies to all parts of the union equally, let your readers have "thus sayeth the law" and be convinced.

M. M. CLAPPER, M.D., Hartford City, Ind.

COMMENT.—The reference of our correspondent to the new income-tax law is the best possible illustration of the limitations of federal power. It will be remembered that Congress, a number of years ago, did pass an income-tax law, which was promptly decided by the United States Supreme Court to be unconstitutional. An amendment to the Constitution was then prepared and submitted to the states. As soon as the necessary number of states had ratified it, Congress at once passed an income-tax measure. If the Reilly bill or any similar measure should become a law, the Supreme Court would without doubt declare it unconstitutional. An amendment to the Constitution similar to the income-tax amendment would then be necessary to make such a law valid.

Taking up now the question raised by our correspondent, the expression "public welfare" embraces a variety of interests. It may refer to primary social interests of safety, order and morals; to economic interests, or to political interests. The federal government, through its constitutional authorization, has delegated to it, in large part, chiefly the third class of interests, while the first two are reserved to the several states or to the people. As a result, it would appear from the best authorities that there can be no federal regulation of the practice of medicine whereby a person may, under a federal license, be authorized to practice in any given state, and contrary to the laws thereof. That is to say, that each state only may determine who is to practice medicine within its jurisdiction, and that Congress has no power to legislate to that end. (Freund, Police Power, Paragraph 9. Stimpson, The American Constitutions, Chapters 3, 10, pp. 60, 106).

The profession of the physician, whose relations to life and health are of the most intimate character, and thereby closely associated with "safety, order and morals," would clearly seem to fall within the first group, that is, the "primary social interests." It is almost entirely because of this intimate relationship, whereby the ignorant and credulous may be imposed on by empiricists and charlatans, that the government is authorized to enact certain conditions for the regulation of the medical profession. The right to impose such regulations is derived from the "power of police," or power to prohibit and prevent the perpetration and promulgation of any act *per se* fraudulent. "Police power" is inherent in all governments or sovereignties. That is, the right and authority to issue police regulations for the furtherance of the public safety, order and morals or for the social interests, is a consequence of the establishment of government. But, under the Constitution of the United States, the federal government has only such powers as are either expressly or impliedly vested in it. All other powers are reserved to the several states or to the people. Among such reserved powers are the powers of police within the jurisdiction of each of the several states, and included therein is the right to regulate the practice of medicine within the confines of each of the states. (Freund, Police Power, Paragraphs 10, 64, 65, 68, 85. *Dent v. West Virginia*, 129 U. S. 114; *Hawker v. New York*, 170 U. S. 189; *Jacobson v. Massachusetts*, 197 U. S. 11; *State v. Hathaway*, 115 Mo. 36.)

A state regulates its domestic commerce, contracts and the transmission of estates, real and personal, and acts on all internal matters which relate to its moral and political welfare. Over these subjects the federal government has no power. The "police power," which is exclusively in the states, is alone competent to preserve the public peace, health and morals. Nor can this power be taken from the states, either wholly or in part, and exercised under legislation of Congress.

The precise question as to the constitutionality of a federal enactment regulating the practice of medicine has not, so far, been decided by the United States Supreme Court because no federal law providing for such regulation has ever been enacted; but an examination of the several cases, cited herewith, would seem to show that all legislation regulating the practice of medicine is but an exercise of that "police power" vested solely in each of the several states to control the "primary social interests" as to health, morals and safety, and further, that from the very institution of our form of government, state and federal, all such affairs as the regulation of the liquor traffic, the regulation of the practice of medicine, and in fact any matter involving the intimate relations of daily life as between man and man, were specifically vested in the states. Hence it would clearly seem to follow under the rule that a court must follow the law as heretofore decided in prior cases, that the validity of such a measure could hardly be decided otherwise than negatively. (*Martin v. Hunter's Lessee*, 1 Wheaton 304; License Cases, 5 Howard 4; *United States v. DeWitt*, 9 Wallace 41; *Barbier v. Connolly*, 113 U. S. 27; *People v. Compagnie Générale*, 2 Sup. Ct. Rep. 87; *Mugler v. Kansas*, 123 U. S. 623; *Gundling v. Chicago*, 177 U. S. 183; *Compagnie Française v. Louisiana*, 186 U. S. 380; *Jacobson v. Massachusetts*, 197 U. S. 11; *Williams v. Arkansas*, 217 U. S. 546).

No power has been conferred on the federal government by the Constitution of the United States whereby the government may establish mere police regulations within the jurisdiction of any state. And the federal government can claim no power not granted by the Constitution; hence federal authority is limited to a simple prohibition on the states as against any invasion of the sphere of national sovereignty.

Thus, it would seem to be well settled that the police powers of the states extend to the regulation of those callings which closely concern the public health. And further, it would seem clear that legislation which simply defines the qualifications, and provides for the licensure, of one who attempts to practice medicine within the jurisdiction of any given state is something confessedly belonging to the domain of the police power as vested in that state. Hence it is that no power can be found vested in Congress authorizing a federal regulation of the practice of medicine within the confines of any one or all of the several states. This view is evidently held by the United States Supreme Court in all the cases involving the state control of the practice of medicine which have come before it. (*Dent v. West Virginia*, 129 U. S. 114; *Hawker v. New York*, 170 U. S. 189; *Reetz v. Michigan*, 188 U. S. 505; *Watson v. Maryland*, 30 Sup. Ct. Rep. 644).

The Regeneration of the Blood After Splenectomy

To the Editor:—The editorial on this subject (THE JOURNAL, Nov. 15, 1913, p. 1816) gives such an incorrect idea of the present state of our knowledge concerning this subject that I feel compelled to call attention to certain discrepancies in the data on which the editorial is based. An extensive study of the changes in the blood following splenectomy in the normal dog, carried out under my direction during the past two years (Pearce, R. M.: The Relation of the Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice, Papers I-VII, *Jour. Exper. Med.*, 1912, xvi, 363, 375, 758, 769, 780; 1913, xviii, 487, 494; an eighth paper is now in press [*Jour. Exper. Med.*, December, 1913]) has demonstrated conclusively that the spleenless animal always develops an anemia which is progressive for several weeks, usually reaching its period of greatest severity after from three to six weeks and then gradually improving with a return to normal after from three to five months. This is a constant occurrence, demonstrated again and again, in many animals. In Vogel's work (from Asher's laboratory), which is the basis of the editorial opinion, a diet with high iron content was commenced eighteen days after splenectomy. As the condition of the blood improved, it was assumed that this improvement was due to the high iron content of the diet. This conclusion rests on a single experiment on a splenectomized dog with a normal dog as control. There is no control of the experiment by a study for a long period of the blood-picture in a splenectomized animal on an ordinary or low iron diet. The administration of a diet rich in iron was begun, not immediately after splenectomy, but after eighteen days, when, according to observations, regeneration of the blood usually begins. The question naturally arises, Was the improvement in Vogel's single experiment due to diet or to the regeneration naturally occurring at this time? The theory that one function of the spleen is to regulate the iron metabolism is most plausible, but it should have more definite basis than that offered by a single experiment. In our own work on iron metabolism in the splenectomized dog, on low and high iron diet, though four splenectomized animals have thus far been used, we have on account of the discordant results of chemical analysis reached no definite conclusions.

On the basis of Banti's theory (that in certain forms of splenomegaly the accompanying anemia is due to a hemolysin of splenic origin) splenectomy, in that improvement follows the procedure, may have some justification; but in pernicious anemia the justification is not so clear and the results thus far reported are by no means uniformly favorable. If it is done as a last resort and a forlorn hope it may perhaps be countenanced, but it should be definitely understood that the procedure is not in accord with such experimental evidence as we have at hand. The problems concerning the spleen in its relation to blood destruction and regeneration are exceedingly complex, and the experimental and clinical evidence often paradoxical; but until more definite knowledge is at hand splenectomy in anemia, not accompanied by splenomegaly as in the Banti type, should not be urged as a procedure having a definite scientific basis.

R. M. Pearce, M.D., Philadelphia.

[Comment.—We are glad to print the foregoing communication from Professor Pearce and to call attention in this way to his researches on the relation of the spleen to the blood. The question of the relation of the spleen to iron metabolism is, it must be frankly admitted, still *sub judice*. With respect to the final contention in the foregoing communication we believe that we were quite as cautious in drawing any permanent conclusions as Professor Pearce has been. Our object was essentially to give prominence to a suggestion which is not entirely devoid of an experimental background. The limitations of our knowledge in this field were plainly referred to.—Ed.]

"Burnam's Test" for Formaldehyd: a Question of Priority

To the Editor:—Hugh Cabot and O. R. T. L'Esperance in an article entitled "The Excretion of Formaldehyd by the Kidneys of Patients Taking Hexamethylenamin, a Study of Burnam's Test" (*Boston Med. and Surg. Jour.*, Oct. 24, 1912, p. 577), and later B. F. Jeness in an article entitled "Burnam's Test for Formaldehyd in the Urine" (The Journal, March 1, 1913, p. 662) described in detail a method for determining small quantities of formaldehyd in the urine, calling this method, both in the title and in the text, "Burnam's test." This test consists in the use of dilute solutions of phenylhydrazin hydrochlorid, sodium nitroprussid and sodium hydroxid. It is a delicate color reaction, for all practical purposes specific for formaldehyd and very sensitive, revealing the presence of minute quantities of formaldehyd, even in albuminous fluids, such as milk, nephritic urine, etc.

This so-called "Burnam's test" was discovered by Rimini (*Ann. di Farmacol.*, 1898, p. 97), and has been in use extensively ever since as "Rimini's test." I have used it for years in my formaldehyd work (see *Tr. Chicago Path. Soc.*, 1912), my attention having first been called to it in a paper by Fenton (*Tr. Chem. Soc.*, 1907, xci, 693), who speaks of "Rimini's test" as one of the most reliable methods for detecting small quantities of formaldehyd. In looking the matter up, I find "Rimini's test" given as a standard method in several lexicons and encyclopedias of practical chemistry.

Why deprive the discoverer of this important method of the distinction of having his name attached to it? It is "Rimini's test" and *not* "Burnam's test," and should be so named by all who use it—including Burnam and his coworkers.

A. C. Croftan, M.D., Chicago.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FACIAL SPASM

To the Editor:—What is the probable cause of involuntary unilateral twitching *(spasm)* of the pyramidalis nasi muscle? Spasms come on frequently during the day, last five minutes or so and stop. Embarrassment results from the grimacing. There is no discoverable cause in ear, nose or throat. What portion of the facial nerve is probably affected, and what treatment could you suggest?

Q., Walla Walla, Wash.

Answer.—The etiology of facial spasm is still an obscure chapter in medicine. Owing first to the intimate relationships existing between psychic activity and facial expression and, secondly, because of the many connections between the facial nerve and numerous sensory nerves, we recognize two general causes, psychic and reflex, for the production of involuntary facial twitching. To the psychic variety belongs the large group of facial tics, called also tic convulsif, conditions having a psychogenic basis and consequently curable only by psychic means. Meige and Feindel have published an interesting book (Tics and Their Treatment, translated by S. A. K. Wilson; New York, William Wood & Co., 1907, $3), the classic on this subject, which contains not only the etiology and the varied symptomatology of tic convulsif, but also a detailed treatment of this type of facial unrest. With reference to reflex facial spasm, every organ in contiguity to the face and supplied by the trigeminus or other cranial nerve, and even organs remote from the facial territory, must be carefully examined and any existing pathologic condition remedied. Oppenheim, for instance, has seen the disappearance of spasm in the pyramidalis nasi by removal of enlarged tonsils; others have had the same result by correcting uterine displacements and relieving genital disorders. Rarely facial spasm is caused by direct compression of the facial nerve by either tumor or aneurysm, in which event the underlying condition must be treated. In a few cases localized facial spasm is produced directly by the occupation which the patient follows, as for instance the spasm in orbicularis and nasal muscles occurring in watchmakers. In the majority of cases, however, a definite anatomic basis is not demonstrable. Last but not least, there is a slight twitching, more felt than seen, in the orbicularis and nasal muscles which results from states of fatigue and nerve-strain and is frankly neurasthenic in character. In these cases the treatment of neurasthenia will be indicated. It is impossible to give definite directions for the treatment of a symptom having so many possible causes. In a general way it will be necessary to decide whether the case is one of tic or true spasm. Tic is treated by psychotherapy, while the facial spasm must be treated according to the nature of the lesion, depending on the origin and pathology of the symptom—from the performance of a brain operation to the touching up of the nasal mucosa with silver nitrate.

ARTICLES ON DYNAMIC ILEUS

To the Editor:—Please furnish me with all available literature on the subject of dynamic ileus.

Edwin D. Watkins, M.D., Memphis, Tenn.

Answer.—The following list includes the most recent articles on this subject:

Vaccari, L.: Postoperative Paresis of the Intestines, *Policlinico*, Jan. 28, 1912.
Dieffenbach, W. H.: Electric Treatment of Intestinal Obstruction and Postoperative Paralysis of the Bowel, The Journal, April 1, 1911, p. 958.
Illoway, H.: Hysteric Paralysis of Intestines, *Arch. f. Verdauungskr.*, 1912, No. 3; Hysteric Paralysis of Somewhat Rare Form, *Arch. Diagnosis*, October, 1911.
McElhaney, C. W.: Ileus Paralyticus Relieved by Operation, *Med. Fortnightly*, March 10, 1911.
MacMillan, J. A.: Acute Postoperative Paresis of Intestine, *Proctologist*, September, 1912.
Pilcher, J. T.: Experiences with Hormonal in Treatment of Acute and Chronic Intestinal Paresis, *New York State Jour. Med.*, November, 1912.
Pettenkofer, W.: Electric Treatment of Postoperative Paralysis of the Intestines, *München. Med. Wchnschr.*, Nov. 5, 1912.
Schubert, G.: Postoperative Ileus, *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, No. 2.
Hartwell, J. A.: Intestinal Obstruction, *Jour. Exper. Med.*, August, 1913; abstr., The Journal, Aug. 30, 1913, p. 710.
Renton, J. C.: Intestinal Obstruction, *Edinburgh Med. Jour.*, September, 1913; abstr., The Journal, Oct. 4, 1913, p. 1330.
Adams J. E.: Intestinal Obstruction, *Practitioner*, London, September, 1913.
Bundschuh, E.: Volvulus of the Large Intestine, *Beitr. z. klin. Chir.*, 1913, lxxxv, No. 1.
Sweet, J. E.: High Intestinal Obstruction, Postoperative Ileus and Acute Pancreatitis, *Pennsylvania Med. Annals*, April, 1913.

THE VALUE OF ECHINACEA

To the Editor:—Is there any great value in echinacea, and if so in what does it consist? I find a good many physicians using it who seem to think that it possesses value as preventing the formation of pus, and in perhaps getting rid of pus after it has formed. In the many cases which I have seen in which it was used, I have been unable to satisfy myself that any effect whatever was produced, and I have looked on it, therefore, as entirely worthless. Some physicians give it by the stomach, and some hypodermically, the latter claiming great increase of virtue when it is thus given.

Surgeon.

Answer.—Echinacea has been claimed to be a "specific" for rattlesnake bite, syphilis, typhoid fever, malaria, diphtheria and hydrophobia. Later enthusiasts have credited it with equally certain curative effects in tuberculosis, tetanus and exophthalmic goiter, and with power of retarding the development of cancer. On the basis of the available evidence the Council on Pharmacy and Chemistry decided that echinacwas not worthy of recognition as a drug of probable value. Accordingly it voted not to describe the drug in New and Nonofficial Remedies (The Journal, Nov. 27, 1909, p. 1836).

So far as can be learned no reliable evidence for the claims made for this drug has been presented since the Council decided that the available evidence did not entitle it to a place in New and Nonofficial Remedies.

DOES SMALL-POX PROTECT AGAINST BOVINE VACCINATION?

To the Editor:—In The Journal, Oct. 25, 1913, p. 1556, in answer to this question of Dr. R. P. Stark, you answer, "Yes." I do not know on what data you found your answer, as opportunities to try the experiment must seldom present themselves. No physician would be apt to urge vaccination on a person who has had small-pox; but I once had an opportunity to try it, and the result was quite a surprise both to the patient and to myself. In 1880 I was a vaccinator of the board of health during an epidemic in this city. In the course of my wanderings among the dwellers in the tenement-houses, offering them vaccination, I came across a woman of about 50, deeply pitted from an attack of variola sustained while a child in Ireland. In joke, I offered to vaccinate her. To my surprise she consented. I explained to her that it might take, and if so, would probably make her quite sick, and assured her that as a prophylactic she had no need of it, as she was already better protected against another attack than any vaccination I could give her But she was very anxious to try the experiment and so I vaccinated her. After about a week she developed as fine a primary as I have ever seen, with considerable malaise, fever, etc., which ran the usual course.

E. Hochheimer, M.D., New York.

Answer.—This case is, of course, somewhat exceptional, but other instances of a like nature have been reported. That the development of vaccinia is prevented by the presence of an active small-pox is shown by the fact that vaccination does not take when performed before or during the primary fever of small-pox. It is not impossible that an immunity should disappear after a long period of time.

OPERATION FOR LACERATED CERVIX—TREATMENT IN PARALYSIS OF LEGS AFTER POLIOMYELITIS

To the Editor:—1. What is the approved method of dealing with a lacerated cervix at time of delivery?

2. Please name other measures of benefit besides persistent massage and hygiene for paralysis of both legs in a young child following poliomyelitis.

H. T.

Answer.—1. The operation should be postponed to the latter part of the puerperium unless hemorrhage is serious, in which case immediate suture should be resorted to.

2. Endeavor should be made to induce the child to use vigorously any muscles which remain unparalyzed. Sometimes the slowly interrupted galvanic current will excite contractions in the larger muscles, and if this is the case it should be used for a few minutes twice a day. Any tendency to deformity should be opposed by appropriate apparatus. Foot-drop is most apt to occur, and can usually be prevented by a simple Taylor club-foot brace. If severe contractions develop rapidly, conservative tenotomy and redressment may be required. After about two years of conservative treatment, the case will be ready for radical operation according to the indications, tendon transplantation if possible, joint fixation if necessary. The object, of course, is to enable the patient to walk without apparatus, although this object cannot always be attained.

ARTICLES ON ABDERHALDEN'S SERODIAGNOSIS

To the Editor:—Please describe the technic for the Abderhalden reaction especially as applied to organic diseases. I want to try it out with the different forms of epilepsy and insanity.

H. M. Francisco, M.D., Skillman, N. J.

Answer.—The Abderhalden test as applied to the diseases mentioned is performed with a technic based on that for pregnancy. The Journal has published the following articles on the subject:

The Present Status of Abderhalden's Serodiagnosis, editorial, The Journal, Aug. 16, 1913, p. 493.

Fauser, A.: Serodiagnosis by Abderhalden's Technic, Deutsch. med. Wchnschr., Feb. 13, 1913; abstr., The Journal, March 22, 1913, p. 949.

Judd, C. W.: The Serum Diagnosis of Pregnancy, The Journal, June 21, 1913, p. 1947.

Schwarz, Henry: Serodiagnosis of Pregnancy, The Journal, Aug. 16, 1913, p. 484.

Abderhalden's Test in Cancer, editorial, The Journal, Oct. 18, 1913, p. 1461.

The Blood Test for Pregnancy, The Journal, Dec. 7, 1912, p. 2073.

Technic of Abderhalden's Serodiagnosis for Dementia Praecox, Queries and Minor Notes, The Journal, May 31, 1913, p. 1727.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 13. Chairman, Dr. W. H. Sanders, Montgomery.

Arizona: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

Colorado: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Delaware: State Society and Homeopathic, Dover and Wilmington, Dec. 9-11. Secretary of the Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

Illinois: The Coliseum Annex, Wabash Ave. and 16th St., Chicago, Jan. 14-16. Acting Sec., Amos Sawyer, Springfield.

Indiana: Room 56 State House, Indianapolis, Jan. 13-15. Sec., Dr. Wm. T. Gott, 56 State House, Indianapolis.

Iowa: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

Kentucky: Armory, Louisville, Dec. 11-13. Sec., Dr. J. N. McCormack, Bowling Green.

Maryland: Regular, 1211 Cathedral St., Baltimore, Dec. 9. Sec., Dr. J. McP. Scott, Hagerstown; Homeo., St. Luke's Hospital, Baltimore, Dec. 15-16. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave., Baltimore.

Minnesota: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.

New Hampshire: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.

New Mexico: Santa Fe, Jan. 12. Sec., Dr. W. E. Kaser, East Las Vegas.

North Dakota: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.

Ohio: Columbus, Dec. 9-11. Sec., Dr. Geo. H. Matson, State House.

Oklahoma: Oklahoma City, Jan. 13. Sec., Dr. John W. Duke, Guthrie, Okla.

Oregon: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

South Dakota: Capitol Bldg., Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.

Vermont: Montpelier, Jan. 13-15. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, Dec. 16-19. Sec., Dr. Herbert Old, Norfolk.

Washington: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

Wisconsin: Madison, Jan. 13. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

Nebraska August Report

Dr. H. B. Cummins, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, August 13-14, 1913. The number of subjects examined in was 8; percentage required to pass, 75. The total number of candidates examined was 16, all of whom passed. Eight candidates have been granted licenses through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Bennett Medical College	(1913)	77.5, 80.4
Chicago College of Medicine and Surgery	(1913)	79.6
Hahnemann Medical College and Hospital, Chicago,	(1913)	84.6, 85, 85.
Hering Medical College, Chicago	(1913)	90.9
Hamline University	(1904)	78.6
University Medical College, Kansas City	(1913)	84.6
John A. Creighton Medical College	(1912) (1913)	76, 80.1; 79.9, 80.9, 81.
University of Nebraska	(1912)	85.9
Meharry Medical College	(1912)	79.2

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Barnes Medical College	(1907)	Illinois
Drake University	(1911)	Iowa
State University of Iowa, College of Medicine	(1907)	Iowa
American Medical College, St. Louis	(1913)	Tennessee
Eclectic Medical University, Kansas City	(1911) (1912)	Arkansas; Arkansas.
University Medical College, Kansas City	(1904)	Kansas
John A. Creighton Medical College	(1912)	S. Dakota

Ohio July and October Reciprocity Reports

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports that at the meetings held July 7 and October 14, 1913, twenty candidates were licensed through reciprocity. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Denver and Gross College of Medicine	(1909)	Colorado
University of Colorado	(1911)	Colorado
George Washington University	(1902)	Dist. Colum.
American Medical Missionary Coll., Chicago	(1909)	Michigan

Rush Medical College, Chicago	(1913)	Nebraska
University of Illinois	(1909) (1912)	Illinois; Illinois
Indiana University	(1908)	Indiana
Keokuk Medical College	(1904)	Iowa
University of Iowa, College of Medicine	(1913)	Iowa
University of Louisville	(1912) (1912)	Kentucky; W. Virginia
University of Michigan	(1912)	Michigan
St. Louis University	(1905)	Missouri
Washington University, St. Louis	(1912)	Illinois
Long Island College Hospital, N. Y.	(1899)	New York
University of Buffalo	(1897)	New York
Cleveland Homeopathic Medical College	(1909)	New York
Ohio Wesleyan University	(1911)	Illinois
Western Pennsylvania Medical College	(1908)	Penna.

One candidate, a graduate of the University of Naples, 1908, was examined, and passed with a grade of 86.9.

Arizona October Report

Dr. John Wix Thomas, secretary of the State Board of Medical Examiners of Arizona, reports the written and practical examination held at Phoenix, Oct. 7-8, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 13, of whom 7 passed and 6 failed, including 3 osteopaths. Eight osteopaths were licensed through exemption. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Colorado	(1912)	77.7
Bennett Medical College	(1912)	80.4
Chicago Medical College	(1901)	84.1
Indiana University	(1912)	80.6
University of Louisville	(1909)	81.1
College of Physicians and Surgeons, Baltimore	(1890)	75.4
National Medical College, Mexico City	(1896)	74.7*

* Credit allowed for years of practice.

FAILED

Atlanta School of Medicine	(1907)	63.1
John A. Creighton Medical College	(1905)	70.6
Louisville Medical College	(1893)	65.2

Colorado October Report

Dr. D. A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Oct. 7, 1913. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 10, of whom 9 passed and 1 failed. Twenty-nine candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Colorado,	(1912)	75.7; 79.7; 89.5;
	(1913)	75.8; 76.2;; 80.1; 81.2; 83.4.
Harvard Medical School	(1913)	82.6

FAILED

Eclectic Medical University, Kansas City	(1910)	59.5

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Colorado	(1912)	New Mexico
Hahnemann Medical College and Hospital, Chicago	(1884) (1912)	Indiana; Illinois.
Northwestern University	(1910) (1912)	Illinois; Illinois
Rush Medical College	(1909)	Illinois
University of Illinois	(1906)	Illinois
Medical College of Indiana	(1905)	Indiana
Keokuk Medical College	(1894)	Iowa
Kansas Medical College	(1910)	Kansas
University of Louisville	(1905)	Oklahoma
Baltimore Medical College	(1891)	Penn.
College of Physicians and Surgeons, Baltimore	(1908)	W. Virginia
Detroit College of Medicine	(1899)	Michigan
Ensworth Medical College, St. Joseph	(1905)	Indian Ter.
Kansas City Medical College	(1896) (1905)	Illinois; Kansas
Missouri Medical College	(1899)	Illinois
St. Louis Medical College	(1890)	New Mexico
St. Louis University	(1905)	Missouri
University Medical College, Kansas City	(1898)	Missouri
Washington University	(1912)	Missouri
University and Bellevue Hospital Med. College	(1900)	New Mexico
Cleveland Homeopathic College	(1899)	Ohio
Cleveland Medical College	(1897)	Nebraska
Eclectic Medical Institute, Cincinnati	(1891)	Penn.
Medico-Chirurgical College, Philadelphia	(1887)	Penn.
University of Pennsylvania	(1911)	Penn.
Woman's Medical College of Pennsylvania	(1904)	Dist. Colum.

The following questions were asked:

ANATOMY

1. Explain the bony formation of the elbow joint, naming the bony prominences which can be palpated, with their normal relationship. 2. Discuss the construction of the cranium, naming bones and stating how its anatomical formation tends to lessen the force of external violence. 3. Describe the inguinal canal. 4. Give complete anatomy of the sternomastoid muscle. 5. Define flexion, extension, adduction and rotation; mention muscles with attachments which perform these functions. 6. Draw a chart illustrating the blood-supply of the uterus with comments. 7. Trace the course of the main arterial trunk of the lower extremity from the bifurcation of the aorta to the popliteal space. 8. Describe the portal system of veins. 9. What is the thoracic duct? Give origin and course. 10. What is the fissure of Rolando, its significance, and how may it be located on the cranium?

PHYSIOLOGY

1. Give the function of the liver, and of the bile. 2. Describe the functions of the skin, mucous and serous membranes. 3. What are the characteristics of normal urine? 4. Give functions of pneumogastric nerve. 5. What digestive ferments act upon the starches in food, and how? 6. Describe the gross and minute structure of the heart, veins and arteries, giving the bearing on their physiological functions. 7. Name four reflex centers situated in the lumbar enlargement of the spinal cord, with their functions. 8. What do you understand by metabolism? 9. Describe and give the function of the pancreas. 10. Name five ductless glands and define what you understand by internal secretions.

CHEMISTRY

1. Quantitative test for albumin and test for albumose. 2. What constituents of the blood carry oxygen and carbon dioxid? 3. What are the chief chemical constituents of bile? 4. Formula of calomel, and corrosive sublimate, urea, chloral hydrate, sodium borate. 5. What is the chemical reaction when strychnia sulphate is dissolved in an alkaline solution? 6. Define an acid salt and a ketone. 7. What is the chemical composition of human milk in percentages? 8. Give the method of detecting potassium cyanid in the body. 9. Give the difference between a carbohydrate and a hydrocarbon. 10. Write the reaction which occurs when hydrochloric acid, zinc and water act in the presence of arsenic-bearing tissue.

TOXICOLOGY

1. If you were called to see a case with the following symptoms what would be your diagnosis? Headache, imperfect vision, dilated pupils, difficulty in swallowing, drowsiness, tingling sensation along the muscles, gradual and complete paralysis of extremities, extending finally to the muscles of respiration, and patient dies of apnea. 2. What would be your treatment? 3. Give the symptoms of poisoning by atropin. 4. Give treatment of poisoning by atropin. 5. Give symptoms of poisoning by strychnia. 6. Give treatment of poisoning by strychnia. 7. Give symptoms of poisoning by tartar-emetic. 8. Give treatment of poisoning by tartar-emetic. 9. Give post-mortem appearance of poisoning by tartar-emetic. 10. Define toxicology.

SYMPTOMATOLOGY

1. Describe the Widal reaction and tell its uses. 2. Give the symptoms, physical signs and course of a case of catarrhal pneumonia. 3. What are the symptoms of peptic ulcer? 4. What are the symptoms and signs of dilatation of the stomach? 5. Name the causes of ascites and tell how it may be discovered. 6. Describe a case of pulmonary emphysema. 7. Give the symptoms and signs of acute pleurisy with effusion. 8. Give the causes and symptoms of amyloid disease of the kidneys. 9. Describe a case of hysteria. 10. Give the causes, symptoms and signs of dilatation of the heart.

PATHOLOGY

1. Differentiate between benign and malignant tumors. 2. Describe the forms of malignant tumors. 3. What pathologic changes may result from cerebral hemorrhage? 4. Describe hypertrophic cirrhosis of the liver. 5. What is the pathology associated with atrophic cirrhosis of the liver? 6. Describe gonorrheal arthritis. 7. What is an embolus? State the sources of emboli and the sequelae of embolism. 8. What is ischemic paralysis? 9. What are cysts? 10. Give a general explanation of the pathology of edema.

SURGERY

1. Describe the different types of club-foot. 2. What is the pathology of the most common type of dislocation of the shoulder? 3. Give the symptoms and diagnosis of acute appendicitis. 4. What are the structures which would be divided in an amputation through the middle of the forearm? 5. What part of the tibia is most frequently fractured, and what are the symptoms of fracture in this region? 6. Give the diagnosis and pathology of chronic enlargement of the prostate. 7. What are the symptoms and diagnosis of stone in the urinary bladder? 8. What is Pott's fracture? Describe the symptoms. 9. What are the symptoms of acute suppurative arthritis of the knee-joint? 10. What are the symptoms of Pott's disease?

OBSTETRICS

1. Name possible sources of puerperal hemorrhages and treatment of each. 2. What would lead you to suspect extra-uterine pregnancy? 3. In breech presentation describe the different methods of delivering the aftercoming head. 4. You are called upon to take care of a woman in labor; describe how you would proceed as regards sterilization of yourself. 5. Give symptoms of rupture of the uterus. 6. How may you prevent perineal lacerations? 7. Outline treatment for the prevention of ophthalmia neonatorum. 8. Discuss the preventive treatment of eclampsia. 9. Give treatment of eclampsia. 10. Give the mechanism of L. O. A.

Scope of Preventive Medicine.—Preventive medicine means more than vaccination against disease, disinfection and sanitation. It means as well the study of heredity and practice of eugenics, subjects which every physician should consider who is anxious to contribute his share to the prevention of disease and improvement of the race.—L. M. Mervin Maus, in *Chicago Med. Recorder*.

Book Notices

Interstitial Gingivitis and Pyorrhea Alveolaris. By Eugene S. Talbot, M.S., D.D.S., M.D. Cloth. Price, $4. Pp. 340, with 102 illustrations. Toledo, Ohio: The Ransom and Randolph Company, 1913.

Interstitial gingivitis or pyorrhea alveolaris is frequently regarded by the dentist as a mere local disease which reveals itself by the suppurative changes in the gums, and is to be treated chiefly by local remedies. The developmental relations of the disease have appealed strongly to the author, however, in connection with his studies in development and degeneracy. He looks at it as a manifestation of constitutional tendencies, having its origin in a disease of the alveolar process of the tooth, which causes the gum to retract; the infection results as a secondary process.

In Talbot's view interstitial gingivitis is divided into two stages: In the first there is an inflammatory process in the bone and teeth leading to absorption of the alveolar process and exfoliation of the teeth; in the second, the gums become infected with pyogenic organisms which cause the production of pus. In the first stage the etiologic agents are toxic irritants which reach the tooth through the blood, in the second the agents of infection attack the gums from the mouth cavity. Attacking the disease by purely local measures, especially disinfectants, can only palliate the effects without reaching the cause of the disease. Hence the author's therapy includes, in addition to constitutional measures, local methods that are directed to the initial stage of the disease and aim to excite a healthy hyperemia by the application of iodin to the gums and vigorous massage with the tooth-brush. In applying iodin he is incidentally using a powerful disinfectant, so that his treatment meets the indications drawn from the infective nature of the later stages of the disease. Vaccine treatment does not meet favor in the author's eyes. He urges that the vaccine is not likely to correspond to the pyogenic germ that causes the suppuration. At any rate such treatment could affect only the suppurative lesions and not the underlying bone disease.

Whether or not some of the experimental work in this volume will fulfil the strict requirements of scientific accuracy may be questioned. For instance, observations on the degree of acidity of urine are cited with no data as to daily quantity; in which case reliable conclusions can hardly be drawn. Other criticisms may be made, but the fact remains that a view of the relations of the jaws and teeth to the nutrition and metabolism of the whole organism is presented which is worth careful consideration. If mere oral sepsis, as shown by the severer forms of pyorrhea, is capable, as Hunter believes, of producing a grave form of anemia classed among the pernicious forms, it behooves us to know all the contributing causes of this condition of the mouth.

A Text-Book of Midwifery for Students and Practitioners. By R. W. Johnstone, M.A., M.D., F.R.C.S., Assistant to the Professor of Midwifery in the University of Edinburgh. Cloth. Price, $3.25 net. Pp. 485, with 264 illustrations. New York: The Macmillan Company, 1913.

This addition to the Edinburgh Medical Series is a volume in every way worthy of its predecessors. It is prepared particularly to meet the needs of students in a book of convenient size containing all essential information; sufficient attention is given to practical points and to the discussion of the management of normal and abnormal cases to bring the work up to the demands of those actually engaged in the practice of medicine. The introductory material on anatomy and physiology is followed by a consideration of the physiology of pregnancy, labor in the various presentations, the physiology of the puerperium, and the pathology of pregnancy, of labor and of the puerperium. Puerperal infection is the chief topic in the last section, though it includes also interesting chapters on the newborn and on infant feeding. Finally, operative obstetrics is discussed, and the volume is completed by a carefully compiled index. The material presented is given concise expression, and the practical phase of the subject is emphasized. Thus, the complicated theme of the development of the early embryo and placenta has been simplified by the exclusion of references to comparative embryology. Brief references to the literature have been made here and there for the convenience of the student, but no elaboration of a bibliography has been undertaken. On its technical side description of the simple and the more common operative measures has been detailed, while procedures suitable only to performance in hospitals or by specialists have been more briefly set forth. The volume gives compact expression to the Edinburgh School of Midwifery.

A Text-Book of Surgery for Dental Students. By G. Percival Mills, M.B., B.S., F.R.C.S., Surgeon to the Royal Orthopedic and Spinal Hospital, Birmingham, and Humphrey Humphreys, M.B., Ch.B., L.D.S., Demonstrator on Dental Surgery at the Birmingham Dental Hospital. Cloth. Price, $3.50 net. Pp. 340, with illustrations. New York: Longmans, Green & Co., 1913.

This book is for students and practitioners of dental surgery. In view of the fact that the development of modern bacteriology has thrown much light on the relationship of the mouth to the general health, bacteriology has been treated somewhat fully. The chapter on this subject contains probably all that it is necessary for a dentist to know of bacteriology, provided that he will attempt to do only such things as his knowledge warrants. If he is to encroach on medical fields, he will find that more information is necessary for him than is contained in this book. The pathologic and clinical aspects of inflammation are considered in a simple manner, but the discussion on gangrene leaves much to be desired. Thus the treatment of gangrene would seem to concern only the toes and feet, since no mention is made of noma and related diseases of the mouth. The discussions on tetanus, tuberculosis, actinomycosis and syphilis are likewise very poor. Thus, in the advice regarding the treatment of syphilis, in no instance is the statement made that the patient should be referred to a physician. Note also the following statement: "A point of particular importance is the time when it is safe to allow a syphilitic patient to marry. The general rule followed is twelve months after all manifestations of the disease have disappeared." No mention is made of the Wassermann reaction. There are fairly good discussions on tumors and cysts; on goiter; a chapter on diseases of the eye, and other items whose relation to dentistry is not very apparent.

Genito-Urinary Diagnosis and Therapy for Urologists and General Practitioners. By Dr. Ernst Portner, Specialist for Urology, Berlin. Translated by Bransford Lewis, M.D., B.Sc., Professor of Genito-Urinary Surgery, Medical Department of St. Louis University. Cloth. Price $2.50. Pp. 221 with 43 illustrations. St. Louis: C. V. Mosby Company, 1913.

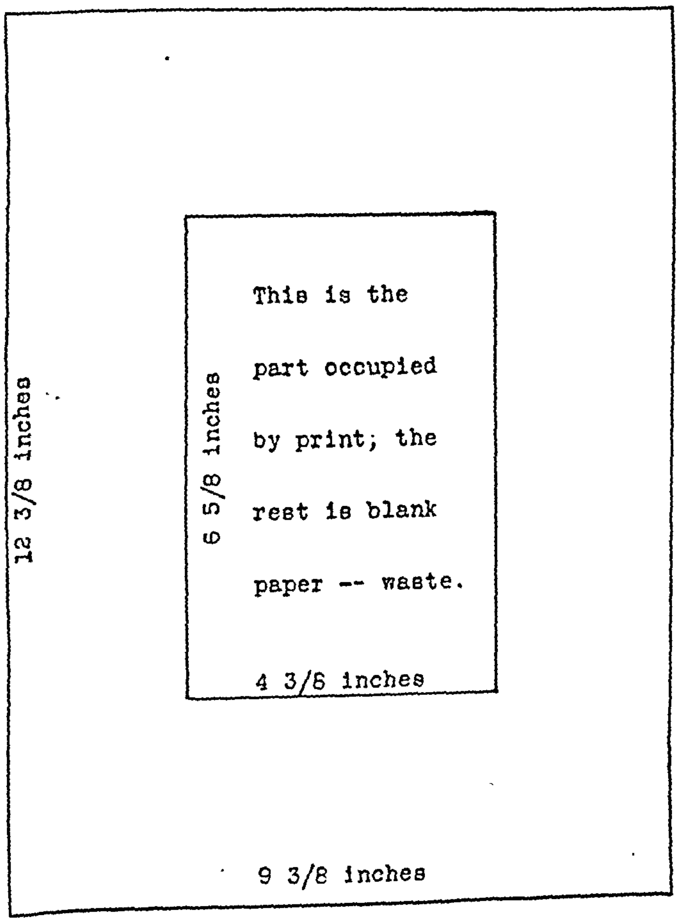
This book presents in a concise form a practical treatment for genito-urinary diseases. It deals entirely with therapy, furnishing the information that the practitioner most desires and needs in the treatment of urinary cases. Pathology, symptoms and diagnosis are mentioned only occasionally and then only to bring out or to drive home a therapeutic point. There is no padding and no attempt is made to give the history of any method of treatment, nor is mention made of a large number of more or less obsolete therapeutic methods. The advances made in the last few years in the study of the gonococcus are discussed fully. The diagnosis and cure of gonorrhea by the use of the gonorrhea complement-fixation test, and the allergy reactions are fully described.

The Origin and Nature of Life. By Benjamin Moore, M.A., D.Sc., F.R.S., Johnston Professor of Biochemistry, University of Liverpool. Cloth. Price, $0.50. Pp. 256. New York: Henry Holt & Co.

All those whose interest in this subject was reawakened by Schäfer's presidential address last year to the British Association will welcome this little book. Like Schäfer, Moore also believes that "life probably arose as a result of the operation of causes which may still be at work to-day causing life to arise afresh." He briefly discusses the genesis of electrons and atoms, chemical evolution in the suns, chemical compounds on earth, building materials for living matter and evolution of colloids, the study of which in the last decade has become the center of feverish industry. Coming to the origin of life on earth he holds that, as the evidence of geology shows, life appears in a cooling planet as soon as temperature will permit. At first it is evident that spontaneous production of such a thing as even a bacterium or other unicellular organism would by no means solve the problem. The new-born cell would have no organic pabulum and must perish. Inorganic colloids must first develop and in turn one of them must begin to evolve, not a living cell, not even a complex protein, carbohydrate or fat, but some quite simple form of organic molecule which must possess the property of transforming sunlight or some other form of radiant energy into chemical energy. Later this simple organic compound would begin to condense and form more complex organic molecules; and finally complexes of inorganic and organic matter would come into existence as crystallocolloids. Thus without any hiatus life would be led up to and inaugurated.

STUDIES IN CANCER AND ALLIED SUBJECTS. Conducted under the George Crocker Special Research Fund at Columbia University. Volume I—The Study of Experimental Cancer. A Review. By William H. Woglom, M.D., Assistant Professor, Columbia University. Cloth. Price, $5 net. Pp. 288, with illustrations. Volume III—From the Departments of Zoology, Surgery, Clinical Pathology and Biological Chemistry. Price, $5 net. Pp. 308, with illustrations. New York: Columbia University Press, 1913.

The first volume contains an extensive and valuable review of the more recent experimental work on cancer. Quite a number of the articles in the third volume have been printed before. They bear more or less directly on the problems of cancer and show that cancer is being investigated by special workers in many departments of Columbia University. As pointed out in the notice of the second volume of this series of reports there are serious objections to the form of the book. The volumes are unwieldy and too large for many book-shelves; the blank margins are so unusually and needlessly wide that only a quarter of the page is occupied by print; three-quarters of the paper is unused. The third volume weighs 4½ pounds; hence about 2 pounds of good, white paper are wasted in every volume to no other purpose than annoyance to the reader and librarian and increased expense for postage and expressage. How will Columbia University justify this foolish waste of the George Crocker Special Research Fund?


This is the part occupied by print; the rest is blank paper -- waste.
12 3/8 inches
6 5/8 inches
4 3/8 inches
9 3/8 inches

Proportion of print and blank paper.

COPROSTASIS: ITS CAUSES, PREVENTION AND TREATMENT. By Sir James Sawyer. Cloth. Price 2 shillings 6 pence. Pp. 74. Birmingham: Cornish Brothers, 1912.

Coprostasis is a rather stately Greek title for the familiar subject of constipation. The book consists of two lectures on the subject, and lest one might forget what he said in the first the author repeats much of it nearly word for word in the second. Line upon line and precept on precept is a good proverb. but hardly suited to the temper of the readers of modern medical literature, who are accustomed to look for something new. Sir James deprecates the use of drugs, but when ordinary methods, of which he recommends diet, exercise, and a suitable position during defecation, are exhausted, he resorts to them; and drawing from his own extended experience he recommends aloes as if it were almost a personal discovery. The author is fond of honey; he tells us that it should be pure, that in his county excellent honey is furnished by the Warwickshire Beekeepers' Association, and that it may be spread on bread. He also permits the use of ginger-bread and biscuits, and even suggests making them with oatmeal instead of wheat flour. Further he says, "As to beverages, either oatmeal water or prune tea are helpful and may be drunk hot, warm or cold." All this is, to be sure, very good advice, but the reader is continually tantalized with the hope that some new method will soon be mentioned. Even his favorite crouching position in defecation is not new. It is bad enough to have had such stuff once encumbering the pages of the *Lancet*, but to publish it in book-form is too much. The author highly recommends the enema, but says that it can be given properly only through an O'Beirne's tube which, it seems, will extend through the sigmoid flexure. We wonder whether he has ever confirmed this by the Roentgen ray! Other workers appear to have failed in this attempt. There are perhaps some important hints in the book, but we have failed to find them. It would have saved trouble to the author and the reader to have printed them separately and to have thrown the rest away.

APPLIED BACTERIOLOGY FOR NURSES. By Charles F. Bolduan, M.D., Assistant to the General Medical Officer, Department of Health, New York City, and Marie Grund, M.D., Bacteriologist, Research Laboratory, Department of Health, New York City. Cloth. Price, $1.25 net. Pp. 166, with 62 illustrations. Philadelphia: W. B. Saunders Company, 1913.

The subject of applied bacteriology is presented clearly and concisely in this book, which is written in an interesting and readable style. There are two main heads—general bacteriology and special bacteriology. Under the first are chapters on the character of bacteria, the methods of studying bacteria, the preparation of stained smears, the cultivation of bacteria, disinfectants and antiseptics, sterilization by heat, relation of bacteria to disease, transmission of infectious diseases, and immunity. In the chapter on the transmission of infectious diseases great stress is laid on "carriers" and little on "fomites." To quote: "The knowledge we now possess on this subject proves that infectious diseases are transmitted by persons rather than by things, by contact with others, by certain discharges of those who are infected and by insects and vermin." The division on special bacteriology includes the various infectious diseases, bacteriology of milk, fermented milks, bacterial food poisons, bacteriology of water, animal parasites, practice of disinfection, collection of material for bacteriologic examination, and other important pathogenic micro-organisms. The work is not too technical and treats the whole subject in such a way as to be entirely suitable for the use of training schools.

CLINICAL PATHOLOGY. By P. N. Panton, M.A., M.B., B.C., Clinical Pathologist to the London Hospital. Cloth. Price, $4 net. Pp. 446, with 58 illustrations. Philadelphia: P. Blakiston's Son & Co., 1913.

The author attempts to describe in a reasonable compass such laboratory investigations as have a practical bearing on diagnosis and treatment. No list of references is given, and the names of authorities unless definitely associated with a special reaction are for the most part omitted. The text is divided into eight sections—on blood, bacteriology, puncture fluids, urine, alimentary system, eye and skin, respiratory tract and histology. We question whether there is need for a work of this kind. It is neither a book on clinical diagnosis nor a clinical pathology. It contains much of normal histology and laboratory technic and comparatively little of real clinical pathology. Within the limited space of four hundred pages the author has tried to write a number of compends. The most pretentious chapter is the one devoted to bacteriology. There is no evidence of tests or clinical pathology. Twenty-five pages are given over to a consideration of the bacteriologic, chemical and microscopic examination of puncture fluids; thirteen pages are devoted to histologic methods. This work savors too much of the compend, which is not what a work of this size should be.

Disease of the Rectum and Pelvic Colon. By Martin L. Bodkin, M.D., Rectal Surgeon, St. Mary's Hospital, New York. Cloth. Price, $3.50. Pp. 416 with 90 illustrations. New York: E. B. Treat & Co., 1913.

In his description of the anatomy of the anus, rectum and pelvic colon, Bodkin brings out many minor anatomic points that are of paramount importance clinically, the knowledge of which is absolutely essential to a proper understanding of the symptoms, clinical course and treatment of many rectal diseases. The chapters on rectal carcinoma and rectal stricture give well-tried and proved methods of treatment. In the chapter on hemorrhoids, several operative technics are minutely described. The point is made that the treatment should be adapted to the type and the location of the hemorrhoid in each case. Local anesthesia is recommended, and urged in all cases that do not require a stretching of the sphincter. The ordinary pyrography cautery is recommended as efficient and is used by the author in place of the more expensive instruments. The chapters on fissure and fistula give in detail the techinc necessary to diagnose and treat these common pathologic conditions. The technic of packing the rectum for hemorrhage by using the Pennington tube is well described and illustrated.

Medicolegal

Construction and Enforcement of Contract with Assistant Agreeing Not to Practice Afterward in Same Town

(Styles vs. Lyon (Conn.), 86 Atl. R. 564)

The Supreme Court of Errors of Connecticut affirms a judgment overruling a demurrer to a complaint to enforce a contract entered into between the plaintiff and the defendant, by which the defendant, a physician and surgeon, agreed for a stipulated consideration to take charge of the plaintiff's business as a physician and surgeon in a named town, and that, in case of a termination of the contract, he would not locate or open an office within the limits of the town for the practice of his profession. The contract was made in 1908, for a period of one year, continued, and, in 1912, the defendant left the employ of the plaintiff, and subsequently opened an office for the general practice of medicine in said town.

The continuance of the contract the court says may have been by renewal from year to year, or by general agreement or acquiescence of the parties. If its continuance was under a general agreement or acquiescence, all of its provisions, so far as applicable, remained in force; and such provisions as were inapplicable to the period beyond the term of the original contract ceased to be effective. The only provision of the contract falling within this ineffective class was that providing that the contract should continue "for a period of one year." Obviously this could apply only to renewals of the contract for the term of one year. The provision of restriction was a necessary part of the contract, containing, as it did, protection for the experienced practitioner against the taking away of his practice by his assistant on leaving his employ, in which the assistant had had the opportunity to gain the confidence and favor of the patients of his employer. The continuance of the contract continued the restriction.

A contract of this character, if not against public policy, is valid if it be founded on a legal consideration and be reasonable. A contract in partial restraint of trade will not, as a rule, be held to be against public policy, unless it unduly interferes with the interests of the public. There was no attempt by this restrictive provision to restrain the defendant from pursuing in an extended territory his vocation for either an indefinite or a limited time. The area of restriction was confined to a single city; the rest of the world was open to him. Under such circumstances, it could not be said that the defendant's liberty of pursuing his profession was interfered with to such an extent as to be unreasonable or to work injury to the public. Moreover, the consideration of the contract was a valid one; its adequacy was not open to inquiry in an examination of the legal validity of the contract.

The test of the reasonableness of this contract was met by answering affirmatively the question, Does it afford a fair protection to the interests of the employer in whose favor it is made? The area of restriction was limited to the place of practice. Without the aid of the restriction, the defendant having won the confidence of the plaintiff's patients might breach his contract, and take away from him the very patients whose confidence he had gained while in the plaintiff's employ. There was no other effective way by which the plaintiff could protect himself in his livelihood except by preventing the defendant from wrecking his practice.

The defendant insisted that there is a distinction between a business and a profession; that, while the period of restriction as to a business may be unlimited, the rule should not apply to a profession, since it is a purely personal relation whose benefits cease on death or the cessation from practice. The court does not think the distinction tenable. A profession partakes on its financial side of a commercial business, and its good will is often a valuable asset. It is true that the profession has its personal side, but it is not true, except under exceptional circumstances, that a professional man is indispensable to any community. The distinction sought is made in a few cases, but generally the courts do not recognize it and almost uniformly follow the rule that the mere fact that the duration of the restriction as to time is indefinite or perpetual will not of itself avoid the contract if it is limited as to place, and is reasonable and proper in all other respects.

The authorities generally are in accord on the rule of law governing this action. A contract between an employer and employee providing for the restraint of the latter, after ceasing to be in his employ, from continuing in a similar employment, will be sustained if it be not against public policy, and be not unreasonable under the circumstances of the case, and be made on good consideration. The facts of the complaint—and each case must be governed by its own facts—showed no circumstances of hardship attendant on the making of the contract and no advantage taken of the employee and no wider restriction than was reasonably necessary for the protection of the employer; therefore, the restrictive covenant could not be held to be unreasonable.

The restriction, though in specific terms not limited in time, was by the fair construction of other provisions of the contract limited to the lifetime of the defendant. Whether if the plaintiff had ceased to practice his profession, and had not transferred his practice to a successor, a court of equity would enforce the restriction in his behalf need not be determined, for the facts as admitted by the demurrer did not present that case, but one in which the defendant had remained in the plaintiff's employ for four years, and the plaintiff had resumed his practice, and was seeking to protect himself in his practice by having the restrictive provision of his contract enforced. Some of the authorities hold, and not without apparent reason, that when the professional man has ceased to practice, the enforcement of the restriction would not benefit him, and would be an unreasonable hardship on the covenantor, and therefore the restriction is, under the then circumstances, unreasonable, because it has ceased to furnish a fair protection to the covenantee. The hardship of enforcing a contract in behalf of one who has no present benefit from the contract and no reasonable probability of any in the immediate future would incline a court of equity to hold such a construction of the contract without the fair intent of the parties to the contract and lead it to refuse its aid.

Liability for Leaving of Sponge in Abdominal Operation—When Responsibility Cannot Be Put on Nurses—Effects of Pleadings

(Palmer vs. Humiston (Ohio), 101 N. E. R. 283)

The Supreme Court of Ohio affirms a judgment for $5,000 damages rendered in favor of the plaintiff for alleged malpractice in negligently leaving a sponge in the performance of an abdominal operation. The court says that the pivot of this case was in the particular pleadings, especially the defendant's answer wherein he admitted the contract to perform the surgical operation, and admitted that "in the performance of said operation it was necessary that certain gauze or cheese-cloth sponges be used." The issues of a case are defined by and confined to the pleadings. Under the pleadings of this case the use, care and removal of such sponges were a part of the operation contracted for. In such a case the use of the sponge becomes a part of the operation as much as the use of knife or needle would become a part of this operation, and, if the use of the sponge be a part of the operation, it must follow as a corollary that the removal of the sponge at the end of its use becomes also a part of that operation.

By way of further illustration and argument, suppose that in the operation a large number of instruments was used, and, in addition to keeping tab on the number of sponges, the head nurse or some third party had kept tab on the number of instruments used and placed within the body, and had made an error in the count, whereby one of the instruments was left in the body; would it be seriously contended that this was not a part of the operation, and that the surgeon was not liable, but that the nurse alone was liable?

The defendant, therefore, having admitted the contract to perform the operation and the use of the sponges as necessary thereto, assumed the full measure of professional responsibility, which is the average care and skill of the profession at the time and in the place of the operation, which must include everything connected with the operation, the use of foreign substances, and also the removal of those foreign substances when the operation is finished.

The defendant undertook to excuse himself from that full measure of care and skill personally by claiming through his counsel that in the performance of such operation it was necessary in careful and skilled surgery to secure the assistance of certain nurses, interns and associate surgeons in and about the hospital, and that included among these was one Miss Kelly, the head nurse, to whom he intrusted the duty of counting the sponges before putting them into the body and on removing them from the body, and that he relied on the accuracy of her count, and that, if there was any error in her count, he, the surgeon, was not responsible. This was a hybrid sort of confession and avoidance, first confessing that he contracted to perform the operation, and that in connection therewith and as a part thereof it was necessary to use sponges, etc., and then, for the purpose of avoiding his full measure of professional and legal liability, contending that, if there was any negligence in failing to remove any sponge, such failure was the negligence of the nurse who did the counting, the adding and the subtracting of the sponges. But no such issue was raised by the pleadings. The defendant could not in his answer admit the employment to perform the operation and admit that in the performance of said operation it was necessary that certain gauze of cheese-cloth sponges be used, and then thereafter undertake to say that that particular part of the operation involving the use of those sponges was in somebody else's hands or head, for whose negligence, if any, he, the operating surgeon, could be held responsible. The defendant must stand on his contract of employment, and his negligence must be determined accordingly. If he was responsible for the proper use of the sponge, about which there could be no doubt under the pleadings and the inferences and deductions which must follow from them, he was likewise responsible for the proper removal of the sponge. The one must follow the other in logical sequence and legal liability.

If one is pleading a defense to a contract set forth in the petition, he may, first, deny the contract; or, secondly, he may admit it and say its terms have been fully kept on his part; but if he admits the contract, and avers that he has fully performed, he cannot thereafter claim that he secured a waiver of certain parts of it. In order that the waiver can avail him, he must plead it. Third, in order that he may stand on a supplementary contract, he must plead it. Fourth, if he is relying on a professional custom or usage obtaining among good surgeons at the time and in the place in which the operation is performed, which would avoid the liability charged, he must specially plead that particular usage or custom, and his pleadings in general must be harmonious and consistent; that is, the particular custom or usage must not conflict with or contradict the remainder of the defendant's pleading.

In this case there was no issue of agency. In order to make evidence relative thereto available, and to excuse the surgeon from any negligence on the part of the head nurse or any of his assistants, it was necessary to specially plead such usage or custom then generally in use at the time and place of the operation.

The record unmistakably presented the ghastly fact that a large gauze sponge, 14 inches square, was left in the abdomen just under the abdominal wall for more than six months after the operation. Whether this fact was due to the negligence of the surgeon, whether it caused the plaintiff any of the great pain and suffering, physical and mental, set forth in the pleadings, what the amount, if any, was her damages, were all properly questions for the jury and the courts below. With these this court has nothing to do.

No Case Made Against Roentgen-Ray Specialist—Limit to Doctrine of Res Ipsa Loquitur

(Sweeney vs. Erving (U. S.), 33 Sup. Ct. R. 416)

The Supreme Court of the United States affirms a judgment in favor of the defendant in this action to recover damages for personal injuries sustained, as was alleged, through his negligence in the making of certain Roentgen-ray tests on her body with the use of apparatus owned and operated by him. The plaintiff adduced evidence tending to prove that she was under treatment by a Dr. Kerr for the fracture of a rib, claimed by her to have been caused by the negligence of a railway company, which denied the existence of such fracture, and that Dr. Kerr arranged with the defendant, a specialist in the use of the Roentgen ray for diagnostic purposes, for a Roentgen diagnosis to be made by him, and that on her fourth visit to his office she suffered a Roentgen-ray burn. The court does not consider that there was error in a refusal to instruct the jury at the plaintiff's request that, "If you believe on the evidence that in the course of the operation of the Roentgen apparatus by the defendant the plaintiff was burned, that fact is of itself evidence of negligence on his part, and casts on him the burden of proving, if he can, by a preponderance of evidence, that the plaintiff's injury was not caused, in whole or in part, by his negligence; and in such case, unless you find by a preponderance of the evidence that said injury was not caused in whole or in part by the defendant's negligence, your verdict should be for the plaintiff." Instead, the jury was instructed that "the burden of proof is on the plaintiff to establish by a fair preponderance of the evidence that the burn on her back was caused by negligence on the part of the defendant in the manner in which he subjected her to exposure by the Roentgen ray." The plaintiff's special reliance was on what is called the doctrine of *res ipsa loquitur*, or the thing speaks for itself. But, in the court's opinion, *res ipsa loquitur* means that the facts of the occurrence warrant the inference of negligence, not that they compel such an inference; that they furnish circumstantial evidence of negligence when direct evidence of it may be lacking, but it is evidence to be weighed, not necessarily to be accepted as sufficient; that they call for explanation or rebuttal, not necessarily that they require it; that they make a case to be decided by the jury, not that they forestall the verdict. *Res ipsa loquitur*, when it applies, does not convert the defendant's general issue into an affirmative defense. When all the evidence is in, the question for the jury is whether the preponderance is with the plaintiff.

Again, the court says that it did not appear that there was any evidence on which the jury could properly base a finding that there was danger of injury to the plaintiff by reason of her condition or of any other matter tending to predispose her to such injury; nor to sustain a finding that such possibility was known to the defendant, or by proper study or inquiry should have been known to him. Nor could it be said, as matter of law, that the defendant had undertaken any duty requiring him to make special study or inquiry respecting the plaintiff's condition or the possibility of injury to her, or to advise her of such possibility of injury; for there was testimony that would have warranted a finding that Dr. Kerr had assumed the responsibility of advising the plaintiff respecting the propriety of her submitting to the operation.

Society Proceedings

COMING MEETINGS

American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Southern Surgical and Gynecological Assn., Atlanta, Dec. 16-18.
Western Surgical Association, St. Louis, Dec. 19-20.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

Meeting held Oct. 27, 1913

First Vice-President, Dr. T. Passmore Berens, in the Chair

Neoplasms of the Bladder; Operative Treatment

Dr. Francis R. Hagner, Washington, D. C.: All tumors of the bladder are clinically malignant. Unless they are removed by some operative means they either directly or indirectly cause the death of the patient. At present all seem to be agreed that the Oudin current offers better chances of success than any of their earlier treatments. It is imperative to examine these patients cystoscopically at regular intervals, and to remove at once any evidence of recurrence. My method was first published in November, 1910.

DISCUSSION

Dr. Edward L. Keyes, Jr.: My statistics compare very favorably with those of Dr. Hagner, but one cannot deny that his method gives new hope in desperate pathologic conditions. The disparity between pathologic conditions presented and the general condition in these cases has more than once been forced on my attention. Many cases do not permit of an early diagnosis because there are no symptoms present. In many cases the high-frequency current is of no use. The tumors that can be aided by the high-frequency current are those that are clinically benign. There are several characteristics which aid one in differentiating benign and malignant tumors, two of which are of special importance. The first is the sloughing on the surface of the tumor. Such tumors can be controlled by the high-frequency current. Clinically they are malignant. In the second place there is the tumor of very virulent and intractable form, with which cystitis occurs with an infiltration of the bladder wall. It is impossible to see these tumors without the aid of the cystoscope. Because of the cystitis the use of the cystoscope is very painful. These are the cases that cannot be controlled by the use of the high-frequency current. It is obvious that tumors that can be seen or felt through the rectum cannot be controlled by the high-frequency current, and these are the cases that should be subjected to a radical, open surgical operation.

Dr. Leo Buerger: One point brought out by Dr. Hagner should be particularly emphasized, and that is the importance of an early diagnosis. In the treatment of these cases it is most important to know whether the pathologic examination shows the growth to be a carcinoma or a papilloma. The safest data in making the diagnosis of carcinoma of the bladder are those revealed by the cystoscope. When the papilloma is single, pure fulguration should not be employed, because it is slow. One should bite off as much of the base of the tumor as possible, as well as some of the surrounding tissue. If the tumor grows deeply in the muscular tissue it is carcinoma. If atypical cells are present the tumor is a carcinoma. Another important point was that there was in these cases an area of edema, and the microscope would show edema plus carcinoma. In every case one should look for this edema.

Dr. Alfred T. Osgood: The impression that the entire symptom-complex, or at least the cardinal symptom, must be present before tumor is suspected, seems to prevail. Tumor may exist in the bladder without symptoms or the signs of slight vesical irritability. Symptoms of cystitis are frequently due to or caused by the presence of tumor of the bladder. The cardinal symptom of hemorrhage is very frequently absent entirely and for a long period of time. Sometimes these cases are treated for months or even for years before a tumor of the bladder is discovered. It is the early diagnosis of these malignant tumors that I wish especially to emphasize. Many of these can be helped only by an early discovery of the cause of cystitis.

Indications in Renal Surgery which Demand Immediate Operative Intervention

Dr. Louis E. Schmidt, Chicago: In a general way the urgent cases requiring immediate operation are those in which the conditions in or around the kidney threaten that organ with destruction, or if no relief by operative interference is given the general condition becomes so involved that the termination in most cases is fatal. Hemorrhage, no matter whether produced by injury or in the course of nephritis, tuberculosis, stone or neoplasm, gives rise occasionally to immediate intervention. The same may be said of anuria. It is, however, to the different types of acute nephritis that attention is especially directed. These are: (1) The acute parenchymatous type, which is produced by all well-known infectious diseases; (2) the acute suppurative type, which is exemplified so well by the colon bacillus infection, and (3) the acute toxic type, which is produced by many drugs and toxins. The significance of the passage of bacteria really has not been positively established, but it is my opinion that it is a distinct sign of the involvement of the kidney. Decapsulation probably relieves intrarenal tension, but it is improbable that it relieves intrapelvic tension or edema of the kidney so thoroughly as an incision through the organ into the pelvis. It is an absolute fact that urinary findings may be completely negative even in extreme cases.

It is impossible for a one-sided acute infectious nephritis to occur; if such an acute condition persists for any length of time certain agents are produced in the course of the destruction of the kidney which destroys the kidney cells. These bodies of nephrotoxic character, after gaining access to the circulation, are not only at once the source of the greatest danger in destroying the kidney cells of the involved side, but are equally important to the opposite side, producing similar destruction of the otherwise healthy kidney. If the process is not too far advanced there is at least only the destruction of a certain amount of kidney tissue. With the hope in view that the operative procedure will stop the further progress of the destruction of the kidney and of its opposite, there is also hope that by the operation the consequences to the system in general may be avoided. Under the circumstances the correct course to pursue is to undertake operative measures, particularly when all known conservative treatment has been of no avail. These procedures may vary as to the indication. In the severe hemorrhages the operative procedure should be guided by the condition, and this also holds true in cases of anuria. In groups 1 and 3, after all medical means have been used at least for a short time, operative interference is desirable and decapsulation is the operation of choice in these cases. If operation should be decided on in cases of acute infectious nephritis, especially in colon infection, the kidney should be exposed. If the involvement has not progressed too far, nephrotomy is the operation of choice; otherwise a nephrectomy should be performed.

DISCUSSION

Dr. George E. Brewer: We are all as yet unfamiliar with the indications for operation in certain renal conditions, especially those which demand immediate operative interference. There is no question in my mind but that there is abundant proof that micro-organisms in the blood may pass through the healthy kidney without producing structural changes. But, on the other hand, they may produce changes from sloughing, swelling, infiltrations and even destruction of the organ. What changes occur depend entirely on the virulence of the organism and the resistance of the kidney tissues. There is no doubt that any kidney that has been subjected to disease, or injury, or anything that causes hyperemia, is a kidney that is vulnerable to these organisms. As they attempt to pass through they may find lodgment and form an abscess. There are two general classes of these cases to be considered, the ordinary acute form and the hyperacute form. In the first class the patient is moderately ill and presents the text-book appearance of pyelonephritis or suppuration of the kidney, with which all are familiar. There is another class of cases so virulent that the patient dies before such changes as have been enumerated can occur. In this type the process is so virulent that even renal symptoms are not present. There is usually a beginning chill with a sharp rise of temperature to 104, 105, or 106 F. Associated with this there is intense prostration and pain on the affected side; this pain is often referred to the anterior abdominal wall, which is very misleading. An examination of the urine would show no particular change because the function of the kidney has been entirely suspended. Centrifuging the urine almost invariably will disclose a few blood-cells and often a trace of albumin. In these cases prompt surgical intervention is the only resource. In the staphylococcus or pneumococcus infection the type of the infection is so rapid that unless the kidney is promptly removed the patient will die because of the pronounced toxemia from the kidney, or a toxemia resulting from metastatic abscess in other parts of the body. These are the cases that demand immediate surgical intervention. A careful urinary examination should be made in all these cases with centrifuging.

Dr. John F. Erdmann: In certain instances of streptococcus infection of the kidney there is a possibility of mistaking the condition for gall-bladder trouble or infection of the liver. Clear bile will be found. On careful palpation of the kidneys a pyelonephritis may be determined. If a nephrectomy is done fewer of these patients would be lost.

Dr. J. Bentley Squier: A woman entered the hospital because of frequency of urination and hematuria. She was acutely ill for a time and then the condition subsided, but came on again, the hematuria being very profuse. An exploratory operation was resorted to, but no condition was discovered which called for the removal of the kidney, so it was sutured back in place, decapsulation having been performed. The frequency of urination and tenesmus disappeared and the patient was perfectly comfortable for eighteen months, when the hematuria again appeared. The kidney was again exposed and was found embedded in a dense adherent capsule. Nephrectomy was performed. On section the condition was found to be a typical case of essential hematuria with chronic arteriosclerosis. The decapsulation operation was merely palliative and resulted well until the adhesions and fibrosis formed. In a second case coming under my notice the patient was relieved for two years by decapsulation, when there was a recurrence of the symptoms. The report of these two cases does not prove anything conclusive, but I believe that with more experience with decapsulation we will find it to be a palliative operation and not by any means a curative one. Decapsulation is applicable to anuria as well as to hematuria.

MEDICAL SOCIETY OF VIRGINIA

Annual Meeting held at Lynchburg, Oct. 21-24, 1913

(Continued from page 1930)

Intracranial Traumas at Birth

Dr. John F. Winn, Richmond: A fundamental necessity in the prevention of this accident is more clinical training of students, and some satisfactory disposition of the question of ignorant midwives. Hemorrhage is not necessarily dependent on bone lesions. Pressure may arise from hemorrhage or fracture, or from external pressure on the cranium without fracture. Overlapping of the parietal bones is the chief cause of hemorrhage. Respiratory embarrassment is a factor in the production of intracranial hemorrhage. Cardiac irregularities are often a sign pointing to conditions productive of hemorrhage. The "blue baby," especially, must be watched. The effusion of a considerable amount of blood may occur before signs of increased pressure appear. Thus, two or more days may elapse before the condition can be recognized.

In the prophylaxis of the condition I would emphasize: More routine practice of pelvimetry and fetometry on every primipara and every multipara with a history of dystocia or stillbirth. Accurate diagnosis of the presentation and position of the child prior to labor, and certainly when labor begins, coupled with a thorough knowledge of the mechanism of the contracted pelvis. The cultivation of that watchful expectancy which is necessary for the recognition of the indications of dystocia. A more intimate knowledge of the indications for and correct application of forceps. Forceps should never be used to pull down the unmolded head. Failure to remember that sudden or prolonged pressure by forceps results in dangerous compression of the child's brain. The unskilled use of forceps is more often the cause of compression than the rather infrequent high degrees of pelvic contraction. Routine and careful study of the fetal heart-tones will result in the diminution of this accident. The more general practice of the simple operation of symphysiotomy will likewise reduce the number of asphyxiated infants and cranial accidents.

Birth-Trauma in Epilepsy and Insanity

Dr. Beverley R. Tucker, Richmond: Epilepsy attributable to birth-traumas should be classed as jacksonian. I am inclined to believe that there is a cerebral cell lesion in every case of epilepsy, and that there is no such thing as an idiopathic type. Many cases are due to birth accidents, though the figures are not reliable. The date of appearance varies from very early infancy to adult life. In going over my records, I found fifteen cases apparently definitely due to birth palsy, varying between the ages of 13 months and 25 years. Cesarean section on the mother might have prevented some cases. We should not look lightly on the use of forceps. No person can have an epileptic fit without having a brain-tissue that is susceptible. Likewise, no person can become insane without brain-cell abnormality, except those due to toxins. Are not the failures of surgery due to delayed operations? If the operation were done early, many cases of epilepsy might be prevented. The first attack is usually not given enough consideration. As a cause of insanity I have been unable to fix definitely in my mind cases certainly due to birth-trauma. Some recent cases showing definite changes in the pituitary body showed definite improvement under the use of the hypophyseal extract. I believe that many more cases could be saved by surgical means, especially with the cooperation of the general practitioner, rendered immediately after the first convulsion.

Surgical Treatment of Birth-Trauma

Dr. Charles H. Frazier, Philadelphia: Hemorrhage in the new-born is almost always subdural, as in the adult. Instrumental delivery does not play so important a part as ordinarily supposed. One of the greatest difficulties in recovery is that the hemorrhage is so often bilateral. The determination of the location of the hematoma is the crux of the situation from the surgical point of view. Those above the tentorium are more easily recognizable than the subtentorial because the muscular symptoms are more prominent. In the subdural type, lumbar puncture will usually show signs of hemorrhage. It is further necessary to ascertain whether, in the pretentorial cases, the hemorrhage is unilateral or bilateral. Lumbar puncture should be done in all suspicious cases and also in cases in the subdural spaces of both sides. The first indication is to relieve the pressure. A small piece of muscle applied to the bleeding point will satisfactorily control the hemorrhage in most cases. To attempt to control it with ligatures is a difficult matter. The operative mortality is over 50 per cent. and will of necessity always be high. It should not be considered prohibitory. The ultimate prognosis has not been recorded.

The mentally defective, of either high or low grade, present no surgical aspect. The care for the increasing number of feeble-minded children is the most important economic problem of health boards. Spasticity is very different. Section of the posterior roots of the cord does relieve spasticity. It is not wise to do it in children of unsound mind, or for affections of the upper extremity. For some unexplained reason, the results are not comparable with those in the lumbar region. In the latter, in selected cases, it is unquestionably of benefit. The residual power is the influencing factor. It may be very difficult to tell. Generally speaking, at least five roots should be divided, usually the three lower lumbar and the first two sacral. Identifying the nerves is difficult, and shock a danger. Disappointment may result unless arrangements are made to reeducate the muscles over a period, it may be, of months.

The cases of epilepsy with general, as against focal, symptoms, are not suitable for surgical interference. Neither are they if it has persisted for years. But in the jacksonian, and in those cases in which the motor symptoms are worse than the psychic, surgery is often helpful. It is a mistake to estimate the advantage until at least five years have elapsed. The tendency to improvement at first is well known. It is extraordinary how extensive the lesion may be without any other symptoms than epileptic seizures. The most that can be said is that in exceptional cases operative intervention may prove beneficial. Rarely are the attacks entirely interrupted; more often they are reduced in frequency.

Discussion on Birth-Trauma

Dr. A. Barnes Hooe, Washington, D. C.: Attention to the patient during pregnancy will prevent most cases of instrumental delivery and, therefore, of trauma. How many men to-day in general practice ever think of using a pelvimeter, or of examining a woman to see if there is a deformity? It is the duty of every man, as soon as he is engaged, to make himself acquainted with the conditions of the pelvic cavity.

Dr. J. Bolling Jones, Petersburg: I very seldom use a pelvimeter. I use the hand. We do not hesitate to cleanse our hands and do surgery, and, if we would only look on all obstetric cases as surgical, I do not see why we cannot cleanse our hands and make examinations when necessary. A pelvimeter is necessary, but I do not hesitate to say that the best is the index-finger, and I use it with impunity, provided it is surgically clean.

Dr. J. Shelton Horsley, Richmond: In very young children the sinuses are usually not adherent to the bone, and the mechanical details of operation are easier than in the adult. Necessarily, though, the operation is quite dangerous. It has to be done quickly and gently. Very often little dents will come in a child's skull without a fracture. A few slight strokes at the edge, or an elevator underneath, will pop it up like a dent in a derby hat. I do not believe that such a dent should be left uncorrected. If it is necessary to open the cortex, we cannot be too gentle. There is nothing that will injure the cortex so easily as dry gauze. It should be gently irrigated, or cotton or gauze soaked in solution used.

Dr. Hugh M. Taylor, Richmond: It is all-important to bring this subject to the general practitioner. Its whole fate is in his hands. If he is watching for these cases, he will recognize them. If the indications for decompression could be recognized and carried out successfully, we would close the doors of the epileptic and similar institutions. If we could trace back not only the epileptic, idiotic and insane, but all these abnormal children, classified as such in school, it would be found that the recognition of the condition by the general practitioner is the key to the whole situation.

Dr. Greer Baughman, Richmond: I think that 50 per cent. of epilepsy would cease if all cases of pregnancy were examined by pelvimetry and externally at the end of the sixth month. The necessary knowledge of the pelvis should be acquired sufficiently long before the delivery so that you can prepare yourself. The internal measurement is not needed if we have a normal external measurement, save in the most exceptional cases, so that at the end of six months we can determine and prepare to do what is necessary.

Dr. Virginius Harrison, Richmond: We are generally taught to believe that these cases are instrumental. Mine have been chiefly rapid deliveries with a very small child or a very large pelvis. I think it is well to keep that in mind, so we shall not think that because no instruments were used, there is necessarily no brain trauma.

Dr. Charles A. Saunders, Norfolk: You can measure the passage, but I do not see how you can measure the passenger. I do not see the value of measuring the one if you cannot measure the other.

Dr. John F. Winn: Some comparative estimate may be made of the size of the head and pelvis by vaginal examination. Examination made in the sixth month will make unnecessary frequent examinations during labor. It is not so much the cases of high degree of contracting that embarrass us. They are plain; we know what to do. It is the cases known as border-line.

Dr. Beverley R. Tucker: The number of children delivered by midwives occurs to me as a possible explanation of so many cases of epilepsy arising from birth-trauma. When an obstetrician is at a labor case he performs a service just as important as when a surgeon removes an appendix. All men who have seen epilepsy will bear out the statement that if you want to do anything for epilepsy you must do it early. Seven out of ten I have seen were told it was due to indiscretion in diet, or some senseless thing like that. From whatever point you are going to investigate it, start just as soon as the convulsion first takes place, and never lie to the family or fool yourself. If the attack is accompanied by convulsion and unconsciousness, it is epilepsy and the diagnosis is easy. The mother would make it herself if she were not persuaded by the physician.

Prevention of Malaria

Dr. Frank H. Hancock, Norfolk: The Virginia Society for the Study and Prevention of Malaria makes a special appeal to the laity in Norfolk. The society has provided moving pictures showing the marshes before drainage swarming with mosquitoes, and after drainage with the mosquitoes gone. Another film to be exhibited is to show the appearance of the people living in the affected districts and their improvement after the mosquito has been exterminated.

Intussusception

Dr. William Goodwin, Charlottesville: Success in treatment will depend on early diagnosis of the condition by the general practitioner, and the patient's reaching the surgeon for an early operation. Sudden paroxysmal pain, and the vomiting of blood, with little or no fecal matter, should warrant tentative diagnosis. A mass may, or may not, be felt. It would be better to operate in a case of colitis than not to operate in intussusception. In adults the condition is more difficult of diagnosis. The surgical nature, however, can be made out, and the indications are for laparotomy. All patients should be operated on. In young children, after forty-eight hours, the prognosis is bad. The mesentery, if elongated, should be shortened to prevent recurrence, or the cecum may be attached to the lateral abdominal wall.

DISCUSSION

Dr. Stephen H. Watts, Charlottesville: I wish to emphasize the importance of reducing the intussusception by the method of Senn—pressure on the intussuscipiens rather than traction on the intussusceptum.

Dr. J. Shelton Horsley, Richmond: One patient after having a temperature of 105 F. for the first twenty-four hours, recovered; another died within a short while. Two cases were resected; one though easily reduced was resected, bearing in mind the fatality referred to previously. Children rapidly absorb toxins and become overwhelmed. It has been proved that these toxins are formed within the mucous membrane itself. The squeezing of the bowel, by the telescoping, together with the interference of the circulation, tends to form this toxic material, which has been isolated. If the intussusception is reduced, this overwhelming amount of toxic material may be carried into the circulation and overwhelm the patient, and death follow in a short while. So your troubles are not always over when reduction is accomplished. Therefore, I believe in some cases, even if reduction is possible and gangrene not apparently imminent, it is well to resect and obtain healthy bowel together with an end-to-end suture.

Dr. John W. Dillard, Lynchburg: I saw a baby not quite 4 months old whose appendix was entirely swallowed up in the intussusception. The intussusception was reduced, and the appendix found diseased and blue. The appendix was by actual measurement found to be 4 inches long. The patient made a good recovery.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

Fourth Annual Session, held in Chicago, Nov. 10-15, 1913

(Continued from page 2011)

Roentgenotherapy of Benign and Malignant Tumors

Dr. Kronig, Freiburg, Germany: I have treated 350 cases of myomas of the uterus with Roentgen rays. The chief aim is (1) to diminish the size of the tumor and (2) to lessen the severity of the hemorrhage, but without absolute amenorrhea. I have many times attained this end, especially in younger persons, but I must confess that I have seldom gained the desired object. Shrinkage of the tumor begins only when amenorrhea is gradually established, and relapses are frequent if menstruation has not completely ceased. Roentgenotherapy for myomas of the uterus is far superior to operative treatment by means of total extirpation or by supravaginal amputation of the myomatous uterus.

I have treated 254 cases of cancer with Roentgen rays and radium. The material includes those cases treated for the prevention of the secondary growth after operation for carcinoma, as well as those cases in which roentgenotherapy for carcinoma has been used therapeutically. Of this number 150 cases were treated on purely therapeutic lines and without operation. Of these, 140 were treated with the Roentgen ray and mesothorium combined. Of 64 cases of carcinoma, 43 were treated for the prevention of secondary growth almost exclusively with unfiltered Roentgen rays, while 21 cases were treated partly with filtered and partly with unfiltered rays. The difference is striking. While 32 out of 43 patients died of carcinoma, the subsequent history of 20 patients showed that 60 per cent. of the recurrences occurred the first year after operation.

Thus far we have not succeeded in curing a single case of metastatic carcinoma. It is quite possible to produce remarkable retrogressions and checking of the carcinomatous metastases by means of intense radiation of Roentgen rays and radium, but in all cases the carcinoma later spread further. We have not saved a single patient.

DISCUSSION

Dr. Howard A. Kelly, Baltimore: I have used radium in 366 cases, of which 188 were malignant growths, including tumors of all parts of the body—mouth, throat, nose, neck, lower part of the abdomen, the uterus, etc. I have treated forty cases of cancer of the lower part of the uterus, where the disease is apt to spread rapidly. The cases were considered hopelessly advanced and inoperable, and in three of them, after extensive operation, radium was used. In these three instances there has been no recurrence and health has been fully restored. I have also had four cases in which no operation could be done on account of the general condition of the patients. Two of these patients had diabetes, one Bright's disease, and the other a serious ailment which contra-indicated operation. In these cases apparently a cure has been effected. I have had two patients with cancer of the larynx, one of whom has been well for months, and the other appears to have recovered, but is still under observation.

Diagnosis of Lesions of the Upper Urinary Tract

Dr. Hugh Cabot, Boston: We have now at our disposal methods of diagnosis of lesions of the upper urinary tract and abdomen which are of extreme accuracy. They are not being used with sufficient frequency, and therefore a large percentage of errors in diagnosis are being made. These methods require skill and judgment in their application, and without that skill and judgment they are dangerous.

DISCUSSION

Dr. Arthur D. Bevan, Chicago: We need in each clinic a complete organization, a surgeon, a cystoscopist, a roentgenologist, a competent laboratory worker and an internist. In making a diagnosis of lesions of the upper urinary tract, and in practically all abdominal work, the evidence which we desire to obtain can easily be grouped under four heads according to their value: (1) the history, which in a given case of lesions of the upper urinary tract is more valuable than anything else; (2) proper physical examination, including an examination for tumors, dilatation of the colon with air, cystoscopic examination, catheterization of the ureters, and roentgenograms of the region with or without collargol; (3) the laboratory findings, and (4) in a limited number of cases, exploratory operation.

Report of Cancer Campaign Committee

Dr. Thomas S. Cullen, Baltimore: Few surgeons have sufficient radium to give it a thorough trial. Extensive doses sometimes cure when smaller amounts have but little effect. Only time will tell what percentage of cases can be cured with radium. At present early surgical procedure affords the best chance for cure. The results obtained from radium must be taken into consideration. At the same time the men who have reported the best results are still urging early operation whenever possible. In the past, attempts to instruct the physicians alone have not produced any decisive results. Hence we must go to the people through the newspapers and magazines. Many popular articles have already appeared. The press has responded nobly to our appeal. As a result the patients are coming earlier. Still there is need of further dissemination of knowledge by means of lectures on hygiene in women's clubs, factories and elsewhere. Further, better records must be kept, hospital statistics must be analyzed carefully so that accurate deductions can be drawn from them, and we must have surgical pathologists to aid in diagnosis. Thorough operations must be insisted on as soon as the diagnosis of cancer is made. Patients who have been operated on must be followed up and the results recorded.

In the years past few cases of cancer of the uterus were cured. Now from 20 to 25 per cent. of patients suffering from cancer of the neck of the uterus who are operated on are permanently relieved. Some of these patients are well thirteen or more years after operation. The results following operations for cancer of the body of the uterus are much more comforting, at least two-thirds being permanently cured. These results are a wonderful improvement on those of twenty or thirty years ago, when nearly all died. When women realize what splendid permanent results may be obtained by early operation, and fully appreciate the necessity of finding out just what is the matter with them, instead of procrastinating until the disease is far advanced, the percentage of permanent cures will be greatly increased.

Publicity and Ethics

Mr. Samuel Hopkins Adams, New York: The universal agency of popular education is the daily press. Between that great agency of enlightenment and the medical profession there has been raised a barrier fraught with difficulty, the barrier of the unwritten law of the profession, which says to the doctor, "thou shalt not appear in print."

The daily paper, with all its sins, is the one agency by which the medical profession can attain immediate, positive and direct universal education—a saturated solution of enlightenment. Nothing else will do it. There is no sacred reticence required of a doctor other than the reticence that guards the privacy of his patient. The time has come when the old, obsolete ban of silence should be lifted and the propaganda should go on through the agency best fitted to spread it—the daily newspapers.

Publicity and Education Through the American Society for the Control of Cancer

Dr. Edward Reynolds, Boston: The American Society for the Control of Cancer is composed of prominent members of the profession and of influential members of the laity. It is actively at work in perfecting a wide-spread organization of national scope for the active prosecution of this campaign. It has already been guaranteed, and, indeed, for the most part, has already in cash the large amount of money which is necessary even for initial expense of the organization. It has already under salary a general executive secretary, whose past career is a guarantee of his possession of the necessary power of organization. It plans to work in cooperation with all the existing organizations in the study of cancer and in the promotion of the necessary publicity of all the points on which we already have assured knowledge. It has already been assured of hearty cooperation from the more important of these preexisting bodies, and has received the endorsement of all, or nearly all, of the great national medical associations. It asks the sympathy and effective aid of every member of the profession and of every interested layman and laywoman.

Education and Publicity Through the Council on Health and Public Instruction of the American Medical Association

Dr. Frederick R. Green, Chicago: What can the Council on Health and Public Instruction of the American Medical Association do to enlighten the public on the prevention and control of disease? The answer is obvious. We can place at the disposal of the American Society for the Control of Cancer and the Committee of the Clinical Congress of Surgeons of North America all of the resources of the council. Through the *Press Bulletin* suitable material on this subject can be placed in the hands of five thousand editors, without any cost to the society or to the committee. Through the speakers' bureau addresses can be given to the public on cancer and its menace. Through the bureau of literature, local pamphlets and leaflets on this subject can be distributed.

The work which needs to be done seems also to be threefold and to be peculiarly adapted to the three organizations mentioned. The first thing is to interest the public, especially the wealthy and influential public, in the problem of the control of cancer. This is a movement for the public welfare, and there is no reason why the public should not assume part of the expense. This is the work for which the recently organized society for the control of cancer is admirably adapted.

The second necessity is the careful investigation of the entire problem of cancer, its age, its race and sex incidence, its relative frequency in different occupations and locations and all of the clinical facts connected with its appearance. This is clearly a clinical and surgical problem.

The third requirement is the distribution to the public of the results of such an investigation. This is obviously a task for the Council on Health and Public Instruction of the American Medical Association, representing as it does the organized profession of the entire country. Through its machinery it can, without any additional expense, place before the public any information which may be desired on this question.

Educational Value of Cancer Statistics to Insurance Companies, the Public and the Medical Profession

Mr. Frederick L. Hoffman, Newark, N. J.: For the year 1910 the average age at death from cancer and other malignant tumors combined was 59.2 years for the registration area of the United States. For males the average age at death was 60.4 years, and for females, 58.4 years. Considered by organs or parts affected, the average age at death in cancer of the buccal cavity was 63.1 years; in cancer of the stomach and liver, 61.2 years; in cancer of the peritoneum, intestines and rectum, 59.2 years; in cancer of the female generative organs, 53.8 years; in cancer of the breast, 58.3 years; in cancer of the skin, 68 years, and in cancer of other organs and parts not specified, 56.9 years.

Of the mortality from all causes in the registration area, ages 45 and over, the proportion of deaths from cancer is 8.6 per cent., or, respectively, 6.4 per cent. for males and 11.2 for females. During the decade ending with 1911 the cancer death-rate for all ages has increased from 65.8 per hundred thousand of population in 1901 to 83.9 in 1911. The cancer death-rate of males has increased from 48.7 to 64.2 per hundred thousand of population, or 31.8 per cent., and the cancer death-rate of females has increased from 83 to 104, or 25.3 per cent. Considered by divisional periods of life, the death-rates have increased at all ages and for both sexes, with unimportant exceptions, from ages 5 to 14, inclusive. For males the increase in cancer during the ten-year period, from ages 45 to 54, was 21 per cent.; from ages 55 to 64 it was 39 per cent.; from ages 65 to 74 it was 40 per cent., and at ages 75 and over it was also 40 per cent. For females the increase in the cancer death-rate from ages 45 to 54 was 11 per cent.; from ages 55 to 64 it was 27 per cent.; from ages 65 to 74 it was 32 per cent., and at ages 75 and over it was 44 per cent.

There is sufficient evidence to sustain the conclusion that in quite a number of cases of suicide the underlying motive was the insufferable torture of a hopeless case of cancer. The recorded cancer death-rate is perceptibly diminished on this account. The mortality from cancer has gradually and persistently increased from a comparatively low rate of frequency to proportions which may appropriately be considered a menace to civilization.

Dr. Ernst Schwarzkopf, of the Surgical Clinic of Prague, found that out of 350 cases of cancer of the breast, 321 were operable and only 39 were not operable. Practically all of the early cases which came to him, say of less than six months' duration, were within the operative group. I have made a special analysis of the experience of the General Memorial Hospital of New York with the following results:

This hospital, during the period 1902-1911, treated 1,337 patients on account of malignant disease. Of this number, 531 were males and 806 were females. Of the total number treated, 460, or 34.4 per cent., were cured; the number of improved was 391, or 29.2 per cent.; the number of not improved cases was 266, or 19.9 per cent.; and 115 patients, or 8.6 per cent., were either not treated or remained in the hospital at the end of the period. There were 105 deaths, equivalent to a fatality-rate of 7.9 per cent.

There are the strongest possible reasons for believing, however, that if the cancer facts, including medical and surgical experience, were brought together in an authoritative form, they would materially aid not only the work of the American Society for the Control of Cancer, but also the various cancer research funds, as well as the individual practitioner in his relations to the patients and the public at large. With this end in view, however, it is necessary that there should be intelligent and active cooperation between the laity and the profession, on the one hand, and the life-insurance companies and the federal and state governments, on the other.

Outcome of Cases of Cancer Recorded in the Johns Hopkins Hospital

Dr. Joseph C. Bloodgood, Baltimore: In eighty-five cases of benign lesions of the lip there were 100 per cent. cures. In lesions of the lip which to the sight and touch seemed benign, but which under the microscope proved to be early cancer, there were nine cures, or 90 per cent. The failure to cure in the one case was due to an incomplete operation on the lower lip. When the lower lip only was removed and not the glands, we have cured but seven patients, or 63 per cent. The failure to cure in four cases was due to the involvement of the glands under the jaw. When the complete operation was performed, there have been twenty five-year cures, or 95 per cent. If the lesion of the lip has had previous treatment and has recurred on the lip, the probability of a cure is reduced from 63 to 20 per cent., from 95 to 60 per cent., and from 50 to 20 per cent. The operation for recurrent cancer of the lip reduces the probability of a cure at least 42 per cent. Similar figures can be duplicated with lesions of the tongue, face, skin of the body and extremities.

In the least malignant forms of cancer of the breast, thirty-five patients were cured five years or more after operation. Fifteen patients came for treatment so early in the disease that a diagnosis of cancer could not be made out until at the operation when the lump was explored. Every one of these patients has remained well five years or more; that is, 100 per cent. of cures have been accomplished when the operation has been in the early stage in the less malignant forms of cancer of the breast. In this form of cancer twenty patients came for treatment late. The same complete operation was performed, but the percentage of cures was but 64 per cent. Results, therefore, in the less malignant form of cancer of the breast were: thirty-five cases, 76 per cent. of cures; fifteen early cases, 100 per cent. of cures; of twenty late cases, 64 per cent. of cures. The percentage of cures for all cases of cancer in which complete operation could be done, and in which the period of time since operation is five years, is now 42 per cent. Five years ago it was only 35 per cent.

In cancer control and precancerous lesions the great hope for increasing the number of cures of cancer and decreasing the number of deaths from cancer lies in the education of the public and the profession as to the significance and potential danger of the precancerous lesion; the education of the surgeon as to the best surgery, and the education of the surgeon and the pathologist as to the recognition of the earliest stage of the beginning of cancer in the benign precancerous lesion. Incomplete treatment in the earlier stage of cancer often yields a worse result than complete treatment in a later stage.

COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting held Nov. 5, 1913

The President, Dr. James C. Wilson, in the Chair

Results of the Treatment of Poliomyelitis by Operative Measures

Dr. G. G. Davis: As we become better informed as to what can be achieved by operative procedures in these cases they will be earlier resorted to than at present. A boy of 13 had been paralyzed at the age of 1. The parts involved were the lower part of the trunk and left lower extremity, the back, the region of the hip and almost all of the muscles of the thigh, with the exception of the biceps and one or two of the muscles moving the foot. As he grew older a knock-knee developed. He wore braces for seven years. The first operation was an osteotomy of the femur, done in December, 1910. In the following March an arthrodesis was done to fix the flail-foot. The biceps femoris tendon was loosened from its attachment on the fibula and inserted into the top of the patella; and while the foot was strongly inverted the fascia lata was slit in a longitudinal direction and sewed fast with silk sutures behind the greater trochanter. The boy wore a brace until the various operative procedures had well healed. His walking has improved ever since. The fixation of the ankle eliminated movement at that joint and also to a considerable extent at the joint between the astragalus and os calcis. The mediotarsal joint, in front of the ankle, not being interfered with, allowed the anterior part of the foot to drop somewhat, but not enough to allow the toes to catch in walking. The lateral movement of the foot was also eliminated to a sufficient extent to remedy the tendency to valgus. The transplanted biceps muscle can be seen to contract perfectly, and holds the knee back in walking so that it does not tend to collapse when weight is put on it. The holding of the thigh in a position of internal rotation by fastening the fascia lata to the posterior edge of the greater trochanter corrected the outward turning of the foot in walking.

DISCUSSION

Dr. J. Torrance Rugh: In Italy I saw Putti do an operation which to my mind takes the place of arthrodesis for the ankle-joint, especially in cases of this type. He separates the anterior tendons from the muscles high up on the leg. Then a hole is drilled through the tibia and the tendon ends are drawn through this hole and fastened subperitoneally in front of the tibia, some of the tendons being passed through from one side and others from the other side. He thus shortens the tendons and leaves purely tendinous structure between attachment and insertion, and the tendon acts as a ligament and will not stretch. It is the badly degenerated muscle-tissue which stretches. If there is sufficient contractive power on the part of the posterior tendons, the anterior ones can be shortened and the foot maintained in the proper position, or if there are live muscles anteriorly, the posterior tendons are shortened in the same manner and the necessity of an arthrodesis is avoided. Operative measures, of course, should not be undertaken until it is certain that complete, or all possible, regeneration has taken place, and that there is no possibility of return of power in the muscles. Not until about six years after the onset of the paralysis should operative measures be instituted.

Diet in Psoriasis

Dr. Jay F. Schamberg: A careful study was made of the protein metabolism of eight psoriasis patients. On a given protein diet a psoriatic subject eliminates less nitrogen in the urine than does a normal person on a corresponding diet. Patients suffering from psoriasis exhibit a remarkable retention of nitrogen. This retention appears to be proportional, in a general way, to the extent and severity of the eruption. The nitrogen is retained to a greater degree than in any other condition, and on a diet low in nitrogen and insufficient in caloric value, one on which a normal person would fail to maintain equilibrium. Experiments with urea feedings show conclusively that the nitrogen retention cannot be attributed to any disturbance in the eliminative capacity of the kidneys. Patients with extensive psoriasis may lose very large amounts of nitrogen in the exfoliated scales, which consist of almost pure protein.

The retention of nitrogen in most cases is greater than can be accounted for by the protein lost in the scales, and it may persist even after scaling has ceased and the eruption has virtually disappeared. A low nitrogen diet has a most favorable influence on the eruption of psoriasis, particularly when the latter is extensive. A high-nitrogen diet exhibits an unfavorable influence on psoriasis, commonly causing an extension of the eruption. The great proliferation and exfoliation of cells by the skin in psoriasis demand a large supply of protein, which can be procured only from the lymph- and blood-streams. This protein supply may be derived from the ingested food, and a possibility exists that the great demand of the diseased skin for protein may also be satisfied by the protein reserve in muscle tissue, which thus may become depleted and later require restoration. A protracted low-protein diet may diminish the proliferative activity of the skin by diminishing the supply of protein, the principal building material. On the other hand, a high-protein diet may stimulate the proliferative activity of the cells by furnishing an abundant supply of the necessary protein.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

November, LXVIII, No. 431, pp. 817-1016

1 *Treatment of Puerperal Streptococcemia with Intravenous Injections of Magnesium Sulphate. J. A. Harrar, New York.
2 *Lactation Atrophy of Uterus. D. H. Stewart, New York.
3 *Rupture of Symphysis Pubis in Labor. H. E. Tuley, Louisville, Ky.
4 Intermittent and Unilateral Chyluria; Myomectomy at Eighth Week, Pregnancy not Interrupted: Gastrectasis Following Ventral Fixation of Uterus with Long Labor. A. B. Davis, New York.
5 *Conservatism in Operations for Acute Inflammatory Pelvic Disease. B. Van Sweringen, Ft. Wayne, Ind.
6 *Local Anesthesia in Operations for Hernia. J. H. Jacobson, Toledo.
7 *Diagnostic Hysterotomy. G. K. Dickinson, Jersey City, N. J.
8 Laceration of Cervix, Causative Factor in Salpingitis. F. Reder, St. Louis.
9 Report of Cases. A. T. Jones, Providence, R. I.
10 *Use of Iodin in Abdominal Surgery. L. Frank, Louisville, Ky.
11 *Cancer of Uterus and Fibroid Tumors from Clinical Standpoint. E. J. Ill, Newark, N. J.
12 Uterine Fibromyomas of Lower Uterine Segment. J. N. West, New York.
13 *Observations Based on Seventy Cases of Bowel Obstruction. W. C. G. Kirchner, St. Louis.
14 Fibroma of Intestine, Eventuating in Intussusception and Obstruction. H. O. Pantzer, Indianapolis, Ind.
15 Stenosis of Pylorus in Infancy with Report of Cases. J. W. Keefe, Providence, R. I.
16 Fibroma Cardia in Girl of 18; Gastrostomy and Enucleation. J. F. Erdmann, New York.
17 Gall-Stone Surgery with Report of Cases. J. H. Branham, Baltimore.
18 Sudden Severe Hemorrhage into Ovarian Cyst Following Delivery. W. E. Darnall, Atlantic City.
19 *Seven-Pound Ovarian Tumor that Developed in Nine Days. J. H. Carstens, Detroit.
20 Appendicitis in Young Women. H. S. Lott, Winston, N. C.
21 Plastic Method of Closing Ventral Hernia. L. F. Smead, Toledo.
22 *Cholangitis and Pancreatic Lymphangitis. L. W. Swope, Pittsburgh.

1, 2, 3, 5 and 6. Abstracted in THE JOURNAL, October 4, pp. 1320 and 1322.

7. **Diagnostic Hysterotomy.**—When hysterotomy is justifiable, Dickinson says, still remains a question. He has grave doubts whether any one can answer this in pathologic terms. Personal pride in making a diagnosis without too much surgery should lead to a proper effort to obtain same through complete history, curettage, and perhaps the added opportunity of a manual examination of the uterus, but if by these means, particularly in chronic cases, one cannot be positive as to the contents of the uterus or of the condition of its substance, then in Dickinson's opinion hysterotomy is not only justiable but necessary.

10. **Iodin in Abdominal Surgery.**—From his work experimentally and from clinical observations with iodin in the preparation of the field for abdominal operations, Frank concludes that though tincture of iodin is effective as a means of sterilizing the skin, it has its disadvantages. Should the intestines come in contact with the iodin, adhesions will undoubtedly take place in the area exposed, due to the action of the iodin as an irritant to the peritoneum; when tincture of iodin is used as a means of preparing the field, the utmost care should be taken to avoid such contact by protecting the field beyond the abdominal incision by means of moist pads securely fixed in place, and under no circumstances should iodin or its tincture be poured into the peritoneal cavity. In the normal peritoneal cavity iodin in alcoholic or aqueous solution is in sufficient quantity distinctly toxic.

11 and 13. Abstracted in THE JOURNAL, October 4, p. 1323.

19. **Ovarian Tumor.**—One morning, Carstens' patient, aged 30, ii-para, noticed that her abdomen was unusually large; she took a cathartic without relief, her abdomen increasing in size day by day. Carstens saw her just nine days after the onset of the trouble. On physical examination he found an intra-abdominal enlargement extending from the symphysis pubis to near the umbilicus. When lying on her back it was rounded, dull on percussion and fluctuating; nothing could be felt through the vagina, except that the uterus was apparently normal. Her temperature was 100.5 F. Carstens decided this woman had developed a simple ovarian tumor which had produced no symptoms, and had filled the pelvic cavity until it had grown so large that one night it popped up above the rim of the pelvis, and the next morning the patient discovered enlargement. While the tumor was being forced out of the pelvic cavity, the pedicle became partly twisted, sufficiently so as to interfere with the return circulation; as a result some of the veins had ruptured, and there was a gradual filling up of the sac with blood, and an increased flow of serum which, evidently, occurred also during this time. By moving around, attending to her usual work, the pedicle in a few days became still more twisted and finally the circulation was entirely cut off. The tumor then became gangrenous, and the sepsis began to develop just when Carstens first saw her. The operation was a simple one, there were a few slight adhesions, but special care was taken when the sac was emptied not to contaminate the peritoneal cavity. The sac contained a dark, grumous fluid, having the odor of decomposition. The sac itself was green in spots, showing the evidence of gangrene. The infection was from the colon bacillus. She made a quick and smooth recovery.

22. Abstracted in THE JOURNAL, October 4, p. 1323.

American Journal of Public Health, New York

October, III, No. 10, pp. 977-1122

23 Limitations of Federal Food Law. C. L. Alsberg, Washington, D. C.
24 Function of State Authorities in Control and Improvement of Food-Supplies. H. E. Barnard, Indianapolis, Ind.
25 Function of Municipal Authorities in Control and Improvement of Food-Supplies. E. J. Lederle, New York.
26 Function of Voluntary Organizations or Agencies in Control and Improvement of Food-Supply. B. B. Burritt, New York.

Annals of Surgery, Philadelphia

November, LVIII, No. 5, pp. 577-720

27 *Traumatic Erb's Paralysis in Adult. A. S. Taylor and L. Casamajor, New York.
28 *Splenic Anemia, with Special Reference to Etiology and Surgical Treatment. J. S. Rodman and D. P. Willard, Philadelphia.
29 Exactness in Diagnosis and Conservatism in Treatment of Renal Calculus. P. M. Pilcher, Brooklyn.
30 Transperitoneal Resection of Diverticulum of Bladder. E. Beer, New York.
31 Report of 105 Cases of Strangulated Hernia. E. G. Alexander, Philadelphia.
32 *Immediate and Late Results of Whitehead Operation for Hemorrhoids. H. B. Stone, Baltimore.
33 *Method for Mechanical Fixation of Transverse Fractures. H. S. Souttar, London.
34 Reduction of Fragments in Fractures of Long Bones at Open Operation. J. C. A. Gerster, New York.
35 Development of Author's Gastro-Enterostomy Clamp. W. Bartlett, St. Louis.
36 Chevalier Jackson Method of Finger Elevation of Hyoid Bone in General Anesthesia. E. J. Patterson, Pittsburgh.

27. **Traumatic Erb's Paralysis.**—The only rational treatment of this condition, the authors point out, consists in prompt exploration with such repair of nerve structures as may be indicated in the individual case. If no macroscopic injury is found, practically nothing but a skin wound has been made. After the few days required for healing, the after-treatment may be started vigorously, and with exact knowledge of the condition to be dealt with. If gross injury is found it can be repaired at once and so cause the least loss of time to the patient, and give the most favorable opportunity to the nerves for complete repair. Operation consists in the resection of the damaged areas of nerve, followed by end-to-end suture of the roots and trunks. In bad cases in which the resection has been so extensive that approximation by suture is impossible, resection of the middle of the clavicle will greatly facilitate the approximation. An extremity that will move, even with the clavicle absent or distorted, is very much to be preferred to one that is paralyzed, but with the clavicle intact. After-treatment consists in the wearing of some fixation apparatus for from six to twelve weeks, which shall keep the neck and shoulder of the damaged side in close approximation to favor firm anatomic and physiologic union of the nerves. With the removal of the fixation apparatus the various forms

of physical therapeutics should be systematically employed. Results are late in appearing and will seldom be perfect.

28. Splenic Anemia.—Splenic anemia in the author's opinion is a disease entity characterized by a definite symptomatology and pathologic picture, and the so-called "Banti's disease" is its terminal stage. In all probability the primary cause of splenic anemia is a toxemia, the origin of which is to be sought for outside the spleen itself, possibly in the gastrointestinal tract, but the exact nature of which is as yet unknown. This toxin probably acts primarily or secondarily on splenic cells, causing an hypertrophy and increased activity. This increased splenic activity is responsible for the anemia probably through a decreased resistance of the red blood-corpuscles. The icteric pigmentation is also due to an increased hemolysis. Although the thrombophlebitis of the splenic and portal veins is a frequent finding clinically, they believe, from their own experimental work and that of others, that it is not an essential factor in the etiology. If the theory of a primary toxin is correct, they suggest that the blood coming from the spleen to the liver should be doubly toxic, in that it contains not only the primary toxin, but that also elaborated by the splenic substance.

The authors believe that it is the action of this doubly toxic blood that causes the endophlebitis of the splenic and portal veins with its consequent thrombosis. In all probability these same toxic factors play the important rôle in the production of liver cirrhosis, although the mechanical factor of congestion of the portal system may be an additional cause. Up to the present time treatment other than surgical has yielded only temporary benefit. Splenectomy in the first and second stages offers the only chance of permanent cure. The mortality is 12.5 per cent. Splenectomy in the third stage will arrest the further development of the disease, but will not cause a retrogression of the liver cirrhosis. In a few isolated cases of early cirrhosis permanent cure has followed removal of the spleen. In the past five years mortality following splenectomy when done in the third stage has been 56.25 per cent. The combination of splenectomy and Talma's operation should be the procedure of choice in this stage.

32. Whitehead Operation for Hemorrhoids.—Of 185 cases cited by Stone, 31 have been operated on less than five years, 59 from five to ten years, 58 from ten to fifteen years and 37 from fifteen to twenty-two years. The results were perfect in every respect in 134 cases, a percentage of 72.4. The most frequent complaint was disturbance of the sphincter action. This complaint was variously phrased; "weakness of control of the bowel" or "imperfect control" were common expressions, and in many cases the statement was made by the patient that he experienced inconvenience in this respect only when from medication or indiscretion in die there resulted an attack of diarrhea. There were thirty-seven cases in which the muscular control was more or less impaired, but in only one of these was there actual paralysis of the sphincter. This patient developed hemiplegia five years after his operation, hence, Stone doubts that the Whitehead operation was alone responsible for the paralysis of the sphincter. Of these thirty-seven patients there were eight who complained of itching or moisture following the operation, but in most of them this was a temporary condition. A number of patients had been bothered for five or six months by sensory disturbances. In sixteen the itching and moisture is still complained of by the patient. In many instances the annoyance was said to be "slight." In five cases there is a certain degree of stricture; two of these were examined by Stone. One of them did not know that he had a stricture; in him there was found a narrow wire-like ring of fibrous tissue of wide caliber, which easily admitted the index finger and caused no symptoms.

In fourteen cases a recurrence in some measure had taken place. One of these patients had had a perfect result for nineteen years and then developed a thrombotic external pile. Another had two small skin tags remaining from the operation. A third has a small external pile. Another says that there is still "some bleeding." Four others have what they describe as a "little return" of the piles. One patient, in response to letters, returned to the hospital, was readmitted and operated on for an isolated hemorrhoidal polyp, which had developed since his original operation. In five cases there was more or less extensive recurrence of the hemorrhoids, and of these, three were operated on the second time. On one of the three a third operation was made, each of the operations being performed by a different surgeon and by a different method. This patient states that he still suffers from hemorrhoids.

33. Fixation of Transverse Fractures.—The plate used by Souttar is of thin sheet, and instead of lying on the surface of the bone is for the most part buried in its substance. For this purpose a slot is cut longitudinally in the two fragments of the bone with a small circular saw. The plate is 1 cm. or more wide and from 5 to 10 cm. in length. The whole of this portion is intended to be buried in the bone. A narrow flange projects from one edge and is to lie on the surface of the bone. This flange may be provided with holes for screws. In other cases it may be preferred to fix it with wires encircling the bone. In most cases screws will be preferred and a special form of screw is provided. They are of steel with a fine thread, as they are intended to engage only in the compact bone. The point is slightly tapered and this portion of the screw is flattened on one side. A sharp edge is thus left, by means of which the thread actually cuts its way into the dense bone. The screw may thus be driven into the bone with great freedom, and scarcely any resistance is encountered till it is actually home. A solid hold is thus obtained which is impossible with other types. The chief advantage of this method is the great solidity of the fixation.

Boston Medical and Surgical Journal

November 20, CLXIX, No. 21, pp. 741-776

37 *Summer Diarrheas in Children, 1911. A. I. Kendall and A. A. Day, Chicago, and E. P. Bagg, Boston.
38 Saprophytism, Parasitism and Pathogenism. A. I. Kendall, Chicago.
39 *Summer Diarrheas in Children, 1912. A. I. Kendall and A. A. Day, Chicago.
40 Etiology of Severe Summer Diarrheas of Bacterial Causation. A. I Kendall, Chicago.
41 Two Types of Infectious Diarrhea in Infants. R. M. Smith, Boston.
42 Preparation of Common Infant Foods. R. B. Hunt, Boston.
43 The Wetnurse Problem. F. B. Talbot, Boston.
44 Relation of Hospital to Hygiene of Pregnancy. J. L. Huntington, Boston.

37. Summer Diarrheas in Children.—The striking fact brought out by the authors is that in every case of infantile diarrhea studied (with the exception of the few fermentative diarrheas) there was a general conformity in bacterial type of the intestinal flora, which was uniformly proteolytic in character. This proteolytic flora forms a striking contrast to that of normal children of similar age, in which the putrefactive activities are minimal. Superimposed on this proteolytic background various of the well-known intestinal pathogens may stand out conspicuously. In the past the isolation of such organisms has sufficed to establish the diagnosis;.it now appears that such is not necessarily the case, inasmuch as one or more of them may be present without the production of noteworthy symptoms. On the other hand, cases are met with in which these organisms cannot be found, yet show blood, pus and mucus in the stools and severe toxemia. In these latter cases the flora has been found to be proteolytic in character.

39. Idem.—Gas bacilli were found by Kendall and Day in fifty-three of a total of 135 cases of diarrhea during the summer of 1912. This is a much higher incidence than that observed in previous years, although the technic employed for the recognition of this organism was that which has been used throughout these investigations. In 1910, for example, gas bacilli were found in but twenty-two of a total of 293 cases examined. In 1911 thirty-three out of a total of 283 were positive. These statistics emphasize the epidemic tendency which the gas bacillus exhibited in 1912. Even early in the season this unusual frequency of gas-bacillus cases attracted attention, and a study was made of diarrheas of moderate severity due apparently to fat indigestion.

In all, 103 cases of these fat diarrheas were studied with this object in view. Of these, six showed definitely large numbers of gas bacilli. Gas bacilli were found in small numbers in six other cases, apparently, however, without significance. Dysentery bacilli were found in five patients; four of these were of the Flexner type, one of the Shiga type. An organism apparently identical with the Morgan bacillus has been found in thirteen of these. A yeast odor was noticed in a considerable number of cases. The stools when passed were more or less frothy and contained considerable amounts of mucus. A peculiar bacillus, which is tentatively grouped with the pneumobacillus was found repeatedly in thirty-one of these, usually in considerable numbers. Paratyphoid bacilli of the Beta type were found in four cases, bacillus pyocyaneus in two, streptococci in six. Yeasts were isolated from the stools of seven patients. The stools from which these yeasts were obtained did not possess a yeasty odor.

California State Journal of Medicine, San Francisco

November, XI, No. 11, pp. 431-474

45 Value of Pyelography for Diagnosis of Hydronephrosis. M. Krotoszyner, San Francisco.
46 Exophthalmic Goiter: Indications and Contra-Indications to Operations. E. H. Schneider, Los Angeles.
47 Clinical Methods of Estimating Degree of Acidosis in Diabetes. T. Addis, San Francisco.
48 *Early Symptoms of Poliomyelitis with Special Reference to New Preparalytic Symptom. J. A. Colliver, Los Angeles.
49 Effects of Civilization on Eyes. A. S. Green, San Francisco.
50 Partial Bilateral Nephrectomy in Case of Calculous Pyonephrosis. W. E. Stevens, San Francisco.
51 Roentgenoscopy of Gastro-Intestinal Tract. A. Solland, Los Angeles.
52 Affections of Eyes Resulting from Sinus Involvements. R. W Miller, Los Angeles.
53 Ringworm in California. H. Morrow, San Francisco.
54 Case of Ophthalmic Migraine. E. W. Alexander, San Francisco.
55 Four Cases of Removal of Prefrontal Tumor of Brain. L. Newmark, San Francisco.
56 Differential Diagnosis of Palmar Syphilis, Eczema and Psoriasis. D. W. Montgomery and G. D. Culver, San Francisco.
57 Parasitic Skin Disease in California. E. D. Chipman, San Francisco.
58 Thrombosis of Lateral Sinus with Report of Five Cases. C. F. Welty, San Francisco.
59 Three Cases of Pellagra in San Francisco. J. B. Frankenheimer, San Francisco.
60 Ductless Gland Extracts in Relation to Ear Affections. H. Y. McNaught, San Francisco.

48. **Symptoms of Poliomyelitis.**—The symptom referred to by Colliver is a peculiar twitching tremulous or convulsive movement of certain groups of muscles lasting from a very few seconds to less than a minute. The amplitude of vibration is greater than a tremor, not so constant and long as a convulsion, and more regular than mere twitching, yet it has in it some of the elements of all. It usually affects a part or whole of one or more limbs, the face or jaw, but it may sometimes affect the whole body. He says that the symptom may easily be overlooked in the beginning, as it usually lasts less than a second and does not recur, unless the patient is disturbed, oftener than every hour or so. Later the duration of the spells lengthens, first to a few and then several seconds; at the same time the intervals between become shorter. This condition is often accompanied by a peculiar cry similar to the hydrocephalic. At times there is a slight convulsive movement just like a chill, as mothers say, during which time the child is apparently unconscious, with eyes set for a few seconds, and then he apparently becomes normal again. This short unconscious spell with eyes set may occur without noticeable convulsive movements. It acts thus something like a *petit mal.* Colliver has observed it as a twitching of the lips with tongue running in and out and working of jaw, preceding bulbar cases.

Cleveland Medical Journal

October, XII, No. 10, pp. 647-722

61 Social Evil in Relation to Health Problem. J. H. Landis, Cincinnati, O.
62 Kinetic System: Theory. G. W. Crile, Cleveland.
63 Laboratory Studies of Activity of Brain and Adrenals in Response to Specific Stimuli. F. W. Hitchings, H. G. Sloan and J. B. Austin, Cleveland.
64 Treatment of Infantile Paralysis. G. I. Bauman, Cleveland.

Journal-Lancet, Minneapolis

November 15, XXXIII, No. 22, pp. 619-652

65 Notes from Surgical Clinics in Germany, Belgium and Great Britain—1913. W. J. Mayo, Rochester, Minn.
66 Who Should Do Surgery? M. M. Ghent, St. Paul, Minn.
67 Fecal Impaction Complicating Pregnancy. J. Grassick, Grand Forks, N. D.
68 Hypopituitarism, with Report of Case. T. J. Billion, Sioux Falls, S. D.

Kansas Medical Society Journal, Kansas City

November, XIII, No. 11, pp. 425-468

69 Acute Infections of Peritoneum. N. C. Morrow, Altamont.
70 Ulcer of Stomach. R. B. Gibb, Pittsburgh.
71 So-Called Social Evil. P. S. Mitchell, Iola.
72 Trachoma. C. A. Landes, Parsons.
73 Fact versus Mental Impression. W. R. Heylmun, Iola.

Medical Record, New York

November 22, LXXXIV, No. 21, pp. 921-966

74 Indications from Urine in Treatment of Certain Diseases of Skin. L. D. Bulkley, New York.
75 Public Value of Different Milks. C. E. North, New York.
76 Comminuted Fracture of Larynx — Accidental Tracheotomy — Multiple Trauma — Extensive Frostbite — Recovery. D. B. Delavan, New York.
77 Utility of Enzymes in Malaria. F. W. Lamballe, U. S. Army.
78 Fundamental Principles of Biochemistry, Their Application in Study of Colloidal Minerals and Their Resulting Use in Medicine. J. A. Handy, Buffalo.
79 *New Method of Repair for Vaginal Hernia, with Report of 140 Cases in Which It Was Used. H. A. Wade, Brooklyn.
80 Some Objections to Materia Medica Standardization, with Reference to U. S. Pharmacopeia. F. E. Stewart, Philadelphia.
81 Infantile Eczema. B. F. Ochs, New York.

79. **Repair for Vaginal Hernia.**—In Wade's method an incision is made beginning at the lateral mucocutaneous junction of the posterior aspect of the vaginal outlet. The amount of tissue that, without too much tension, may be brought up to the urethra, is estimated, and then the mucocutaneous junction at this point is grasped with a mouse-tooth forceps, and with slight traction a curved incision is made with the convexity directed toward the anus, extending to a point at the same level on the opposite side of the vaginal outlet. A flap of mucous membrane is now dissected upward, and with a clamp held clear of the field of operation. This flap is allowed to remain, and subsequently acts as an umbrella to protect the plastic work done below from the irritating discharges above. By means of the fingers the dissection is continued laterally on either side until a firm fascial layer is made out. Then these layers of fascia, not muscle, are brought together and held with a continuous suture of No. 2 chromic catgut. The superficial fascia is similarly united with the same strand of catgut. The skin is dissected free from the superficial fascia. A clamp is placed at the posterior angle of the skin incision and the wound is securely sealed with from four to seven clips. The clips are removed at the end of six to nine days.

New Jersey Medical Society Journal, Orange

November, X, No. 6, pp. 275-328

82 Nasal Hydrorrhea with Report of Case. H. Vaughan, Morristown.
83 Submucous Resection of Nasal Septum. T. W. Corwin, Newark.
84 Rapid Stomach Diagnosis, with Two Original Methods. S. Lewis, Lakehurst.
85 Postoperative Intestinal Stasis and Intra-Abdominal Use of Oil. W. F. Burrows, New York.
86 Results of Open-Air Treatment in Public Schools of Newark.

New Mexico Medical Journal, Las Cruces

November, XI, No. 2, pp. 43-80

87 Artificial Pneumothorax. A. G. Shortle, Albuquerque.
88 Hodgkin's Disease and Its Relation to Tuberculosis. G. E. Giese, Colorado Springs.
89 Observations on Altitude. F. E. Mera, Santa Fe.
90 Medical Profession in Its Relation to Tuberculosis Problem. J. W. Flinn, Prescott, Ariz.
91 Roentgen Ray in Pulmonary Tuberculosis. J. O. Walkup, Fort Bayard.
92 Specifics. C. L. Hendricks, El Paso, Tex.
93 Feeding of Tubercular Patients. E. C. Prentiss, El Paso, Tex.
94 Marked Hemorrhages from Intestines in Tuberculosis. L. S. Peters and E. S. Bullock, Silver City.

New York Medical Journal, New York

November 22, XCVIII, No. 21, pp. 997-1044

95 Recent Progress in Orthopedic Surgery. C. Ogilvy, New York.
96 Inoculation Therapy. M. J. Synnott, Montclair, N. J.
97 Prejudices and Superstitions Met with in Medical School Inspection. J. Sobel, New York.
98 Quantitative Chemical Reaction for Control of Positive Wassermann Reactions. D. M. Kaplan and J. E. McClelland, New York.
99 *Aurometer. M. Lubman, New York.

100 Test for Adult Imbeciles and Six-Year-Old Normals. H. A. Knox, Ellis Island.
101 Myiasis, or Fly Larvae as Parasites of Man. M. G. Wohl, Philadelphia.
102 Expectant School Diseases. H. B. Wood, Providence, R. I.
103 *New Apparatus for Proctoclysis. W. D. Miningham, Newark, N. J.

99. **Aurometer.**—The aurometer designed by Lubman consists of circular headband adjustable by a thumbscrew to fit any size of head. At the sides of this headband opposite the ears, are extended two angular bars graduated in one-half inches. On each bar is a sliding upright piece controlled by a thumbscrew and with a small hook at the top to suspend a watch; the watch will be in the exact line of the external canal. The headband has two eye shields to obstruct patient's vision, for obvious reasons. It is preferred that the watch should hang on a string from the hook, as it will prevent a solid contact of watch with the instrument to transmit vibrations. It is by moving this sliding upright with the watch that gives accurate data of the progress of the case.

103. **Apparatus for Proctoclysis.**—This apparatus consists of a vacuum bottle with a specially fitted brass stopper containing an outlet tube for the fluid and an inlet tube for air extending to the bottom of the bottle. The dropper consists of a glass barrel having an inlet tube with a stop-cock attached and an outlet tube. The most important part of the dropper is the air vent which not only eliminates any tendency toward a vacuum formation which would inhibit the flow, but also permits of the free expulsion of gases from the rectum without in any way contaminating the fluid in the container.

Ohio State Medical Journal, Columbus

November, IX, No. 11, pp. 515-574

104 Case of Polyuria with Study of Kidney Function. G. A. Fackler, Cincinnati.
105 Management of Industrial Accident Cases with Special Reference to End Results. C. D. Selby, Toledo.
106 *Drainage in Abdominal and Pelvic Surgery. C. L. Bonifield, Cincinnati.
107 Induction of Premature Labor. G. B. Booth, Toledo.

106. **Abdominal and Pelvic Drainage.**—Bonifield uses plain gauze wrapped with a thin layer of iodoform gauze and the large wick thus made is put in a rubber tube long enough to extend from the bottom of the abscess cavity through the abdominal wall. Enough gauze protrudes from the end of the tube to completely fill the abscess cavity. His reasons for using plain gauze wrapped in iodoform gauze are as follows: Iodoform gauze arrests hemorrhage better than plain gauze; it seems to be less irritating to the structures with which it comes in contact; they do not cling to it with the same tenacity, and it remains sweet longer when used in infected areas. This drain is applicable whenever drainage is required in the peritoneal cavity. Its size and length are subject to the widest variations. It is made of materials always to be found in any well-equipped operating-room. It requires little time to properly fashion them and most important of all one drain will in the majority of cases be sufficient to meet all requirements.

Bonifield mentions another method of drainage brought to the attention of the profession by Lawson Tait, but largely forgotten now, namely, free purgation with salts. By such purgation the peritoneum was made to absorb rapidly and take care of a limited amount of infectious fluid without much harm to itself. When other drainage is employed its use is seldom necessary, but when the abdomen has been closed without drainage and there is evidence of a mild infection of the peritoneum, Bonifield says he knows of no more rapid or more sure way of arresting the extension of the inflammatory process than by drainage through the intestinal tract produced by free purgation.

Pennsylvania Medical Journal, Athens

October, XVII, No. 1, pp. 1-84

108 Cohesive Function of Society Secretary. H. C. Macatee, Washington, D. C.
109 Medical Ethics in Relation to Roentgenology. D. R. Bowen, Philadelphia.
110 Defense of Alleged Malpractice Suits. C. L. Stevens, Athens.
111 Treatment of [illegible] Stricture by Use of Air-Dilating Urethroscope. G. M. Dorrance, Philadelphia.

Public Health Journal, Toronto

November, IV, No. 11, pp. 591-638

112 Why Are Modern Infectious Diseases Mild. H. W. Hill, London, Ont.
113 Propagation, Cultivation and Distribution of Oysters. T. J. McKey, Toronto.
114 Civil Engineering and Its Relation to Public Health. J. Antonisen, Brandon, Man.
115 Dental Caries in Schoolchildren and Dental Inspection. W. D. Cowan, Regina, Sask.
116 School Grounds and Supervised Playgrounds. G. R. Jackson, Edmonton, Alta.
117 Need for More Complete Organization in Public Health Work. H. G. Pickard, Brandon, Man.

Surgery, Gynecology and Obstetrics, Chicago

November, XVII, No. 5, pp. 523-596

118 *Chronic Ascites. J. R. McDill, Milwaukee, Wis.
119 *Incontinence of Urine, Complete and Incomplete. J. M. Baldy, Philadelphia.
120 Osteitis Fibrosa Cystica. J. F. Percy, Galesburg, Ill.
121 *Acute Hemorrhagic Pancreatitis. G. H. Whipple and E. W. Goodpasture, Baltimore.
122 Benign Polyps of Male Urethra. A. Randall, Philadelphia.
123 *Surgery of Ileocecal Valve. J. H. Kellogg, Battle Creek, Mich.
124 Abdominal Incision in Treatment of Ovarian Cysts. P. B. Bland, Philadelphia.
125 *Irregular Kidney Vessels Found in Fifty Cadavers. R. R. Rupert, Chicago.
126 Hernia of Uterus and Both Adnexae. L. K. P. Farrar, New York.
127 Reaction of Human Organism to Class of Foreign Proteids Represented by Syncytial Cell. C. Foulkrod, Philadelphia.
128 Thrombosis and Embolism following Operation and Childbirth. B. R. Schenck, Detroit.
129 *What Are Best Methods of Educating American Women Concerning Cancer. F. J. Taussig, St. Louis.
130 Pyelitis Follicularis. H. L Kretschmer, Chicago.
131 *Possibilities of Preserving Integrity of Potential Body Cavities by Use of Foreign Body to Prevent Adhesions. F. Prime, New York.
132 Isolated Disease of Scaphoid Bone of Foot in Children (Koehler's Disease). G. E. Pfahler, Philadelphia.
133 *Modification of Webster's Endoperitoneal Shortening of Rour [illegible] tz, Chicago.
134 Eight [illegible] teps of Suprapubic Prostatectomy [illegible]
135 *Dressing and Care of Herniotomy Wounds of Infants and Small Children.* C. G. Buford, Chicago.
136 Value of D'Arsonval Current in Treatment of Benign and Malignant Tumors of Urinary Bladder through Operating Cystoscope. L. T. Ashcraft, Philadelphia.
137 *Method of Controlling Hemorrhage in Thyroidectomy. E. O. Jones, Seattle, Wash.

118. **Chronic Ascites.**—McDill's experiments show that the ends of three strands of No. 20 silk, sewed together, slightly projecting into the lower levels of the peritoneal cavity become a permanent silk-connective tissue peg; that the breach it makes in the abdominal wall allows the escape of fluid, and that the hernia liability is nil. The procedure need not confine the patient to bed for more than one day; is not much more formidable than an ordinary paracentesis abdominis, and can be repeated if necessary at any subsequent tapping until there is sufficient drainage. The permanency of any improvement will depend on the internal treatment.

119. **Incontinence of Urine.**—The points involved in Baldy's operation are: To make permanent pressure on the neck of the bladder and the bladder end of the urethra. This is accomplished by bringing the vaginal mucous membrane and the underlying fibrous tissue from side to side so tensely as to make firmer pressure. This is done by making a denudation of the vaginal mucous membrane and the underlying fibrous tissue at the neck of the bladder; and by bringing the edges of the incision together laterally by interrupted sutures of silkworm gut; and finally, by placing a single reinforcing suture with which to take tension off the suture already placed. The denudation is carried one-half to three-quarters of an inch both fore and aft from the neck of the bladder, in order to insure full pressure at the neck.

The denudation is an oval, the widest point of the oval being as near the exact neck as can be calculated, in order to insure most pressure at that point. The width of the denuded oval is limited only by the possibility of bringing the edges forcibly together with the aid of tenacula. This is important, as it is this which gives the pressure. The denudation is carried into, but not through, the underlying fibrous tissues; resection of this tissue is avoided. The object is to double the fibrous tissue on itself and get a deeper and firmer scar than could be gotten by a resection and bringing the comparatively narrow edges together.

The stitches are of fine catgut, interrupted. The first one is placed directly at the neck, in the cenetr of the oval. They are introduced laterally, are brought out at the bottom of the wound and reintroduced to be carried across and out on the opposite side. Care must be taken, however, not to leave a blind space in the depth of the wound. Too much tension cannot be made on the stitches: the width of the denudation had better be overdone than underdone. The idea is to make it as tense at this point as possible in order to make the utmost pressure. After all sutures have been tied the reinforcing suture is placed. The object of this suture is to draw the tissue from side to side of the vagina over the line of sutures already placed, so as to relieve them from tension until healing has occurred. In placing this suture a point well away from the line of sutures directly at the point of greatest tension is chosen so as to make full allowance for the subsequent cutting of this suture. The needle is introduced in the direction of the long axis of the vagina, so as to get abundance of tissue. A quarter of an inch, longitudinal to the line of suture, can be picked up on both sides of the line of sutures. The suture is carried in depth as far as possible without perforating the bladder mucous membrane. In this way a sufficiently large bunch of tissue is included in the grasp of the suture as to insure against cutting out before healing has fully occurred and the parts have adjusted themselves. The subsequent treatment consists in keeping the sutures as clean and dry as possible, and of the use of the catheter several times a day. The sutures are removed at the usual time for plastic work.

121. **Acute Hemorrhagic Pancreatitis.**—The peritoneal exudate in acute hemorrhagic pancreatitis, according to Whipple and Goodpasture, contains no toxic substances. It is harmless when injected intravenously or intraperitoneally in large amounts into normal dogs or those suffering from acute parcreatitis. The ferments which escape from the injured pancreas are rapidly neutralized, and this peritoneal exudate usually is free from proteolytic ferments and contains the same amount of lipase as does the blood-serum. The hemorrhagic peritoneal exudate may be looked on as having a neutralizing action and appears to benefit rather than injure dogs suffering with acute pancreatitis. Dogs with acute hemorrhagic pancreatitis which are subjected to exploration and removal of peritoneal exudate will appear sicker than control dogs left undisturbed. The pancreas can survive remarkable grades of injury, and this factor of safety should always be considered in drawing deductions from any surgical procedure. Its adaptability of repair seems greatest when the gland is left undisturbed in a closed abdomen.

123. **Surgery of Ileocecal Valve.**—The operation which Kellogg performs for insufficient ileocecal valve action does not differ from the ordinary mode of procedure in end-to-side anastomosis of the small intestine with the colon except in one important particular—that there is a distance of two to three centimeters, measured along the surface of the intestine, between the inner and the outer suture lines. This permits the inverted small intestine to project into the colon about half an inch. The portion of the ileum thus intussuscepted forms a good valve for the reason that the folds of mucous membrane readily fall together whenever there is the slightest backward pressure. In Kellogg's opinion the so-called stort-circuiting operation or ileosigmoidostomy, or any other operation whereby an anastomosis is made between the ileum and the colon, should never be performed without the construction of a valve for the prevention of reflux from the colon into the ileum. Without an ileocolic valve to prevent reflux, an ileosigmoidostomy performed for the purpose of getting rid of the intestinal intoxication arising from stasis in a looped, kindred or otherwise crippled colon may leave the patient in a condition as bad as, or even worse than, before the operation by practically converting into a colon many feet of his small intestine. The best point for attaching the ileum to the colon, Kellogg states, is near the upper end of the distal leg of the pelvic colon. Great care must be taken to avoid bruising or unnecessary handling of the intestine, so as to prevent adhesions, the formation of which about the point of anastomosis may become a source of obstruction.

125. **Irregular Kidney Vessels in Fifty Cadavers.**—Of the fifty cadavers, thirty-five, or 70 per cent., showed a unilateral or a bilateral anomaly of the renal arteries or the veins, or both.

129. Abstracted in The Journal, May 31, p. 1738.

131. **Preserving Integrity of Potential Body Cavities.**—In order to ascertain whether celloidin could be used to advantage in situations in which adhesions are most apt to form, the brain, joints and nerves were selected by Prime as the most suitable places to introduce the tissue. Within the cranial cavity there would be no adhesions if a piece of celloidin were placed beneath the dura, but between the celloidin and the dura, and often between the celloidin and the brain, a connective tissue membrane would form which was smooth and glistening and free from fibers binding it to the underlying tissue. The same thing was found along the nerves, and even when, as a mass, the celloidin was found wrapped in the omentum, the same glistening membrane was found, with the celloidin quite free within it.

The explanation of these phenomena seems to be that at the time of operation, when, for example, the dura is opened and manipulated, there is sufficient injury done to this delicate membrane to set up a reaction, and cause an exudate to be thrown out. The celloidin present prevents this from reaching the underlying surface, so that when the connective tissue begins to grow into this exudate, it simply grows along the surface of the celloidin and the dura, thickening the latter.

In cases of nerve suturing, the results were most satisfactory. A nerve in the foreleg which had been cut across and sutured with fine silk, and a celloidin tube slipped over the point of suture, at the end of ten days showed no evidence of the nerve being bound down, but was free in the tube, and at the end of six weeks another which had been wrapped with a piece of celloidin tissue showed a sheath of connective tissue which had formed over the celloidin, leaving the nerve healed and free beneath it. In places such as the joints it can be used to prevent the formation of new adhesions or hinder the reformation of old ones.

133. **Endoperitoneal Shortening of Round Ligaments.**—The modification which Schmitz proposes and has already executed in a few cases is as follows: Attach a Barrett ligature carrier to the ligature applied to the distal end and carry it between the layers of the broad ligament to the posterior surface of the uterus underneath its peritoneal covering. Make a very small performation in the center of the peritoneal covering to enable one to catch the ligature and thus hold the ligament in position. The same procedure is now carried out on the opposite side. The two ligatures are tied, uniting the two ends of the round ligaments. The latter are finally secured to the posterior wall of the uterus by a few interrupted fine chromicized catgut stitches. These should only include a portion of the round ligament, to prevent gangrene of the same. Finally the proximal end of the round ligament is attached to the distal end as in the Alfieri modification, and the peritoneal incisions are closed. The round ligament now has the form of a Y. The advantages claimed for Schmitz's modification are: 1. The ligaments remain entirely extraperitoneal. 2. There is a mucomuscular attachment between the uterine mucosa and the denuded round ligament. 3. The method does not use the strongest portion of the round ligament for the shortening, hence the functional ability of this ligament is as nearly normal as possible.

137. **Method of Controlling Hemorrhage in Thyroidectomy.**—The following are the steps of Jones' procedure: The usual transverse collar incision is made, dividing the skin and platysma. The upper flap is freed to the upper border of the thyroid cartilage. Then at a point opposite the middle of the thyroid cartilage the fascia over the vertical muscles is slit in a longtudinal direction a finger's breadth inside the border of the sternomastoid muscle. This slit is extended upward

and downward for a distance of about two inches. With narrow-bladed retractors the fascia of the sternohyoid and the sternomastoid muscle is drawn outward, the sternohyoid and sternothyroid muscles inward. The finger is pushed down through this space until the pulsation of the carotid arc felt. By blunt dissection the fascia just to the median side is penetrated when the finger is felt to be in the loose areolar tissue in front of the longus colli muscle. Retractors with longer blades are then substituted. The sternomastoid and carotid sheath are drawn well outward while the vertical muscles and thyroid gland are displaced inward. The space back of the carotid sheath is in this manner well exposed. The carotid tubercle, which is the important landmark, should now be located. About a finger's breadth below the tubercle, the artery is sought for with two pairs of blunt dissecting forceps. It lies in the loose connective tissue and at the extreme point of its arch seems to be surrounded by a sling of rather firm fascia which binds it to the carotid tubercle. When a short area is freed, a ligature may be passed around with an aneurysm needle. The ligature is tied, the retractors removed, and the parts allowed to fall back to their natural places, and the operation of intracapsular thyroidectomy proceeded with in the usual manner.

Texas State Journal of Medicine, Fort Worth

November, IX, No. 7, pp. 205-234

138 Decomposed Foods. J. S. Abbott, Austin.
139 Prevention of Insanity. J. H. Eastland, Mineral Wells.
140 Management, Care and Treatment of Insane at Southwestern Insane Asylum. F. S. White, San Antanio.
141 Arthroplasty. C. H. Harris, Fort Worth.
142 Median Transverse Fascia Incision. F. C. Floeckinger, Taylor.
143 Whiskey Fiend. W. C. Rountree, Fort Worth.
144 Case of Tetanus Treated with Antitetanic Serum and Chloral. R. C. Brookes, Waelder.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Australasian Medical Gazette, Sydney

September 27, XXXIV, No. 454, pp. 283-310

1 National Insurance in Its Literal Sense. A. C. F. Halford.
2 Acute Mania and Its Treatment. J. T. Anderson.

October 4, No. 455, pp. 311-334

3 Heredity. A. Saw.
4 Emotions and Their Relation to Mind. G. H. Taylor.

October 11, No. 456, pp. 335-356

5 Treatment of Persistent Arterial Hypertension of Middle-Aged and Elderly. R. F. Llewellyn.
6 Spastic Paraplegia Treated by Foerster's Method of Intradural Neurectomy. H. Norrie.

October 18, No. 457, pp. 357-380

7 Cases of Pellagra-Like Lesions in Australia. C. A. Hogg.
8 Radicular Neuritis. J. C. Verco.

British Medical Journal, London

November 8, II, No. 2758, pp. 1193-1268

9 Hysteria in Some of Its Aspects. T. R. Glynn.
10 Rational Treatment of Chronic Bacillary Dysentery. L. Rogers.
11 *Gastric Tetany in Adult. W. K. Irwin.
12 *Case of Acute Dilatation of Stomach in Course of Operation for Duodenal Ulcer. W. G. Richardson.
13 Dupuytren's Contraction Successfully Treated by Open Incision and (Thiosinamin) Fibrolysin. A. H. Tubby.
14 Chronic Interstitial Nephritis in Children. H. Barber.
15 Yeast Infection in Children. R. Craik.
16 Salicylic Ionization in Acute Pericarditis. J. S. Mackintosh.
17 Sleep and Treatment of Sleeplessness. G. Savage and W. H. B. Stoddart.
18 *Micrococci in Blood and Cerebrospinal Fluid of Two Cases of Mania. W. Boyd and G. L. Brunton.
19 Present Position of Psycho-Analysis. M. D. Eder.
20 Treatment of Alcoholism by Suggestion. H. E. Wingfield.
21 Case of Extensive Amnesia of Remote Date Cured by Psycho-Analysis and Hypnosis. W. Brown.
22 Vertigo. J. S. R. Russell.
23 Truths about Mental Healing. T. A. Williams.
24 Motor Show from Medical Man's Point of View. H. M. Buist.

11. **Gastric Tetany in Adult.**—Irwin has collected the records of thirty-nine instances of the disease. Of this number 24 were males and 15 females. The average age at which the disease appeared was 42, the youngest patient being 20, and the eldest 66. In the great majority of the cases the symptoms of ga[illegible] disease had existed for many years prior to the onset of the nervous affection, and in only three instances out of the entire number for a period of less than twelve months. Out of 19 cases in which an accurate account of the post-mortem examination is recorded, 11 exhibited a dilated stomach, due to the contraction of a chronic ulcer in the pyloric region. In one case the pylorus was greatly contracted from the cicatrization of a chronic ulcer, but there was not much dilatation of the stomach; in two cases the gastric dilatation was dependent on the cicatrization of an ulcer in the first portion of the duodenum. In one case cancer of the pylorus coexisted with chronic ulcer, but in another case a large growth, evidently cancer, was found at the pylorus. In only two cases was the increase in the size of the stomach found to depend on simple atony of its walls. From these facts, Irwin says, it is evident that in the majority of these cases dilatation of the stomach was a long-standing affection, and owed its origin to the presence of a chronic ulcer in the pyloric region. In the majority of the cases the nervous symptoms consisted of a tonic contraction of the muscles of the hands, forearms, feet and legs, but in a few, tetanic contraction of the jaw and body muscles were present. In three cases seizures of an epileptiform nature were present. Out of the 39 cases recorded only 11 recovered. Every drug, from calomel to the latest antiseptic, has been tried. Numerous authorities recommend gastric lavage, but this is a rather dangerous procedure, as passing the stomach tube, even a soft one, very often induces a severe attack of tetany. Others have advised the patient to take a large quantity of water, followed by an emetic, but Irwin could not find any case recorded in which this treatment had been successful. The only treatment up to the present that has given hopeful results is operation, but even this has not always prevented a recurrence of this grave disorder. The patient should have a dose of calomel and then a saline purgative every morning. Fifteen ounces of peptonized milk should be given by the rectum every six hours, and the bowel should be kept well cleansed by giving a saline or soap enema once every twelve or twenty-four hours, and about an hour before the rectal feed. Oral sepsis must be avoided by daily washing the mouth and cleansing the teeth and gums. This will also prevent parotitis, at one time a serious complication. In cases in which rectal feeding has been necessary and food by the mouth has been prohibited, the patient should have a rubber teat to suck. By the above method, Irwin claims the attacks become less frequent and less severe, and tend to disappear usually about the third or fourth day of treatment.

12. **Acute Dilatation of Stomach.**—Richardson saw this patient seven hours after the sudden attack. He says there was no difficulty or doubt about the diagnosis, but three features of the case were noted as unusual: 1. The abdomen had not the extreme board-like rigidity generally present in such cases; indeed, for a case of ruptured ulcer, the abdomen was rather lax. 2. There was abdominal respiration and very little movement of the chest-in contrast to the usual fixity of the abdomen in such cases of recent peritonitis. 3. The pupils were widely dilated. The abdomen was opened and the diagnosis was confirmed, a chronic duodenal ulcer about half an inch from the pylorus with a perforation at its center. There was lymph on all the adjacent peritoneum, the stomach was empty and small. The hole in the duodenum was closed with a catgut purse-string suture reinforced by a row of silk sutures. The operation was simple and easy in every way but one. The only trouble arose from the difficulty in administering the anesthetic satisfactorily. Anesthesia was induced with chloroform (he appeared to be an alcoholic man, and he struggled a good deal), and it was kept up with ether, given by the open method, throughout the operation. Richardson had sewn up about two-thirds of the peritoneal wound when he noticed about two-thirds of the upper part of the abdomen was distending. In less than half a minute the stomach was bulging into the lower part of the wound and the distention increased so rapidly that the suture had to be unlaced. The stomach dilated more and more until it became drum-like and very tense. It appeared to be anchored at the pylorus and the cardiac extremities, because, as the distention increased,

it rolled upward, bringing the greater curvature forward. The veins on the stomach became very prominent and enlarged. Richardson did not see any distention of the duodenum, and the lower part of the abdomen did not increase in size. A stomach tube was passed by the mouth, and immediately there was a rush of gas through the tube, and the distention disappeared. The stomach then became firmly contracted and not greater in diameter than a piece of large intestine. The muscular contraction was extreme and there was no peristaltic wave. It contracted in sections, there being alternating white rings and intervening portions more naturally colored. The venous engorgement of the stomach also disappeared entirely. At the same time the respiration became quiet and wholly thoracic, the complexion became pink, the pupils contracted, and the whole aspect of the patient changed. Less than five minutes elapsed between the beginning of the distention and recovery. The patient did well, and did not differ in his after-progress from other cases of ruptured duodenal ulcer.

18. **Micrococci in Blood and Cerebrospinal Fluid in Two Cases of Mania.**—In two cases of toxic insanity a diplococcus was isolated from the blood and cerebrospinal fluid on more than one occasion by Boyd and Brunton. In the one case the organism was Gram-negative, did not grow on gelatin, produced acid and clot in milk, and acid and gas in glucose; in the other the organism was Gram-positive, grew on gelatin but without liquefaction, produced no change in milk, and acid alone from glucose. A number of similar cases showing leukocytosis and other indications of toxemia were examined bacteriologically, but in every case with a negative result.

Edinburgh Medical Journal

November, XI, No. 5, pp. 385-480

25 Development of Bacteriology and Place It Accupies among Sciences. J. Ritchie.
26 Eczema: Its Prevention and Treatment. W. A. Jamieson.
27 *Perforated Duodenal Ulcer. F. M. Caird, J. M. Cotterill and Others.
28 Operations for Harelip in Out-Patient Department. J. H. Nicoll.
29 Elephantiasis Neuromatosa. N. S. Carmichael.

27. **Perforated Duodenal Ulcer.**—This is a collective report on a series of 200 cases of perforated duodenal ulcer treated in Edinburgh between 1896 and 1912. For details the original article should be consulted.

Journal of Laryngology, Rhinology and Otology, London

November, XXVIII, No. 11, pp. 565-620

30 Direct Examination of Eustachian Tube and Nasopharynx. J. W. Wood.
31 Simple Prothesis after Removal of Great Part of Lower Jaw. J. v. d. H. Leonhard.
32 Primary Intranasal Syphilis. N. Maclay.
33 Brain Abscess of Aural Origin. J. Murphy.

Journal of Obstetrics and Gynecology of British Empire, London

September, XXIV, No. 3, pp. 133-196

34 *Blood-Pressures in Cases of Normal and Abnormal Pregnancies and Labors. M. Donaldson.
35 *Results of Radical Operation for Carcinoma of Cervix Uteri. C. Berkeley and V. Bonney.
36 Intra-Abdominal Pressure in Pregnancy. R. H. Paramore.
37 Retained Placenta due to Implantation in Sacculus or Horn of Uterus. V. B. G. Armytage.
38 Case of Spontaneous Rupture of Uterus at Eighth Month. V. B. G. Armytage.
39 Hysterectomy by Two Suture-Ligatures. R. L. Dickinson, Brooklyn.

34. **Blood-Pressures in Pregnancies and Labors.**—Having examined the blood-pressure in cases of albuminuria complicating pregnancy, Donaldson found that the most striking feature is the high systolic pressure in each case. Further, he noticed that in purely toxic cases the pressure tends to fall quickly to normal after delivery. In the question of treatment, the observations on blood-pressure seem to be of some importance. A rising blood-pressure in spite of treatment is considered by Donaldson to be an indication for terminating the pregnancy. Observations of blood-pressure were made also in a case of pernicious vomiting in which labor had to be induced. In this condition the pressure is not raised, a fact that suggests to Donaldson that the toxin in these cases differs from that of albuminuric cases. The blood-pressure estimated in a case of glycosuria complicating pregnancy showed nothing abnormal.

35. **Operation for Carcinoma of Cervix Uteri.**—The authors' 71 operations were chosen from 112 patients with carcinoma of the cervix presenting themselves for treatment over the period April, 1907, to June, 1910—an operability rate of 63 per cent. These 112 cases represent every patient that came under observation. Sixteen patients died of the operation; 20 died of recurrence; 2 died of intercurrent disease; 2 disappeared; 3 are alive, but with recurrence; 28 are alive and well. Ten patients died of shock, 2 died of paretic ileus, 1 of mechanical ileus, 1 of pelvic suppuration and empyema, 1 of post-operative hemorrhage and 1 of bronchopneumonia. The deaths by shock comprise those who succumbed a few hours after the operation, apparently as the result of its severity and in whom no signs indicative of any other cause of death could be found either clinically or on autopsy. In the cases in which the glands proved to be carcinomatous at the operation the mortality was 29.5 per cent. In 23 cases the disease recurred. Three of these patients are still alive at periods of four years or over from the operation. In only one place did the recurrence take place in the vaginal scar. In the rest the growth has appeared either in the upper part of the pelvis or in the situation of the aortic glands. The recurrence rate, therefore, if reckoned on those surviving the operation (55) works out at 41.8 per cent. These figures rest on a three years' basis.

Journal of Tropical Medicine and Hygiene, London

November 1, XVI, No. 21, pp. 81-344

40 Bronchial Spirochaetosis. A. J. Chalmers and W. R. O'Farrell.
41 Apparent Identity of Agchylostoma Ceylanicum (Looss, 1911), and Agchylostoma Brazillense (Faria, 1910). R. T. Leiper.

Lancet, London

November 8, II, No. 4706, pp. 1299-1366

42 *Heredity and Inheritance as They Concern Physician. C. Mercier.
43 *State of Blood-Vessels in Shock. J. D. Malcolm.
44 Typhoid Carriers. D. S. Davies and I. W. Hall.
45 Diseases due to Deficiencies in Diet. F. G. Hopkins.
46 *Sensitized Virus Vaccination in Gonorrhea, and Especially Its Complications. L. Cruveilhier.
47 *Some Additional Experiences of Nerve Surgery. A. H. Tubby.
48 Public Measures for Prevention of Tuberculosis. N. Raw.
49 Bacteriologic Diagnosis of Case of Plague. W. J. Tulloch.
50 Estimation and Significance of Amino-Acids in Urine in Diabetes Mellitus. P. J. Cammidge.
51 Mortality of Children from Burning. W. A. Brend.

42. **Heredity and Inheritance in Relation to Physician.**—From his observations Mercier summarizes his views as follows: In the first place, if a child is very precocious it is never safe to predict that it will set the Thames on fire. Mercier excludes musical prodigies or calculating prodigies, because music and mathematics, like chess, and linguistics, and certain other faculties, have no relation to general ability. They may be highly developed in the dull, and they may be absent in exceptionally clever men. They go for nothing. In the second place, when a hitherto intelligent child becomes stupid, dull, clumsy and even when it exhibits mental traits that are distinctly abnormal and alarming, we need not be much concerned if we find that it has started into rapid growth; and if the growth is very rapid almost any mental symptom may be witnessed without alarm. In the third place, we need not fear ill results from stimulating the intelligence of a child, even of a precocious child, provided it is healthy in body, eats well, sleeps well, and is not disturbed by dreams, and provided we do not continue the stimulation into the period when bodily growth has started and the development of mind has no backing. The week that the child starts into growth all stimulation of the intellect should cease; and when the growth is rapid intellectual exertion should be restricted and watched with vigilance. Especially if there is in the family any tendency to nervous or mental disorder, children who are growing very rapidly should be withdrawn from school altogether until the period of rapid growth is over. Mercier says that if he had charge of a school he should measure and weigh the children frequently, and should

regulate their intellectual exertion according as growth was active or quiescent. He does not think that intellectual work at high pressure is harmful to either boys or girls as long as food, sleep and bodily exercise are sufficient; but is quite sure that pressure of intellectual work in those who are growing rapidly should never be permitted; and if growth is proceeding *very rapidly, all intellectual work* should be put aside. Another thing which, in his opinion, requires careful regulation is the diet. It is scarcely possible to give growing children too much to eat, and it should always be borne in mind that the carbohydrates—starch, sugar and fat—are mainly fuel that is burnt up in producing muscular movement, and that the proteins are the main elements in the formation of tissue. Consequently, it is a mistake to restrict the meat ration of children.

43. **State of Blood-Vessels in Shock.**—Malcolm is in accord with Henderson, that in cases of fever, of postoperative intestinal obstruction, and of traumatic shock there is a persistent and increasing contraction of the arteries, a conclusion which he believes to be demonstrable at the bedside.

46. **Sensitized Virus Vaccination in Gonorrhea.**—Cruveilhier has not yet come to any final conclusions concerning the various modifications which, in his opinion, ought to be made in Besredka's method of sensitized virus vaccination in order to adapt it to the treatment of gonorrhea. Yet he is able to state that, as has been proved by the experiments of Metchnikoff and Besredka in antityphoid vaccination, it is always preferable to inject living sensitized virus. In a certain number of cases, when Cruveilhier had absolutely failed while persisting in using dead sensitized virus, he obtained excellent results from the use of living sensitized virus. The serum which he employed in his operations was taken from a she-goat to which he had successfully applied Besredka's subintrant injections of the veins in order to render it immune. He considered that it was not advisable to take from the patient himself the gonococci to be sensitized, and he took them from the cultures which he had had in stock for several months. The injections were principally made in the subcutaneous cellular tissue and were repeated at intervals varying according to the different cases. None of the patients showed any sign of severe general reaction. In some cases there was a slight rise of temperature during the hours which followed the injection. Sometimes Cruveilhier also noticed at the site of the injection some erythema accompanied by a pain which never lasted longer than forty-eight hours.

47. **Experiences in Nerve Surgery.**—Brachial plexus lesions, if traumatic, Tubby says, are hopeful, if the loss of power has not existed for years. If due to other causes the outlook is not so good. However, he cautions that we should not despair of a case recovering, even five years after the operation, provided that the improvement has set in within three months after the operation and is continuous. Popliteal neuroplasty for infantile paralysis, he says, has proved disappointing for the reasons given previously. Injuries about the wrist should never be sewn up until the continuity of the nerves has been ascertained, and until all the electrical reactions have been tested. If the lesion of the nerve is compression by a scar the outlook after operation is most hopeful. If the nerve has been severed primary operation is very hopeful, but secondary suture rarely permits a complete recovery. No case, however, of traumatic nerve lesion Tubby would regard as hopeless, in view of the achievements of neuroplasty. Tubby calls attention to a painful condition connected with enlargement of the head of the first metatarsal bone, where there is not only tenderness on the inner side of the joint but also severe pain on its outer side and in the first interdigital space. This is a condition special to those cases in which there is lipping of the joint surfaces and a deposit of osteophytes, and the cause appears to Tubby to be as follows: On dissecting the part there will frequently be found a communicating branch passing from the digital trunk of the anterior tibial nerve to the corresponding nerve on the plantar surface. This communicating branch arises opposite the most prominent part of the head of the bone and passes immediately downward over the capsule of the joint, to which in inflammatory cases it is often adherent, and it joins the digital branch of the internal plantar to the outer side of the great toe. It is easy to see how painful compression may arise, and the remedy Tubby has adopted is simple: i. e., to dissect away the communicating branch and remove the osteophytes.

Annales de l'Institut Pasteur, Paris

XXVII, No. 9, pp. 701-796

52 Piroplasmosis in Dogs in Europe and Africa. A. Laveran and Nattan-Larrier.
53 *Acute Epidemic Poliomyelitis. C. Kling and C. Levaditi. To be continued.
54 Agglutinating and other Properties of Serum of Patients with Trypanosomiasis in French Congo. F. Heckenroth and M. Blanchard.
55 Malaria in Corsica. M. Leger.

53. **Epidemic Poliomyelitis.**—See editorial in The Journal November 22, p. 1904.

Annales de Médecine et Chirurgie Infantiles, Paris

November 1, XVII, No. 21, pp. 705-740

56 Obesity in Children. (Le syndrome adiposo-génital de l'enfant.) G. Mouriquand. Concluded in No. 22. See Paris Letter, Nov. 8, p. 1730.

Archives Mensuelles d'Obstétrique et de Gynécologie, Paris

October, II, No. 10, pp. 145-304

57 Retroplacental Hemorrhage. E. Essen-Möller.
58 Organotherapy in Gynecologic Disease. S. R. Girol.
59 Attempts to Induce Criminal Abortion with Extra-Uterine Pregnancy. A. Turenne.
60 Superheated Air and Steam in Gynecology. R. Dupont.

Grèce Médicale, Athens, Greece

XV, Nos. 15-16, pp. 29-32

61 The Yellow Oxid of Mercury Combines with Sodium Chlorid in the Secretions and Has Caustic Action on the Eye. (Pommades ophthalmiques à base de bioxide jaune de mercure.) P. Apéry.

Nos. 17-18, pp. 33-36

62 *Means to Prevent and Cure Hernia of the Brain. (Nouveau procédé de contention de la hernie cérébrale consécutive à un traumatisme ou à une operation.) T. Anastassiades.

62. **Means to Reduce Hernia of the Brain.**—Eleven days after extensive injury of the temporal region from a shell, the wound was the seat of extensive suppuration and the young man was in profound stupor most of the time. There was total amaurosis when he sat up; vision returned when he reclined, but there was no vomiting nor stiffness of the neck. After the wound had been attended to, the brain tissue protruded, the hernia as large as a hen's egg. No means proved effectual in keeping the hernia under control until finally Anastassiades improvised a stopper which answered the purpose admirably. A round of sheet lead was bent over a metal cylinder to make a depression in the center just large enough and deep enough to fit into the gap in the skull. This stopper was boiled and applied between two sheets of gauze. The brain tissue was thus reduced and held firmly in place while several holes bored in the lead cap permitted ample drainage. As the lesion healed, smaller and smaller caps were used. In two other battle-field cases this lead device proved equally serviceable; these patients also promptly recovered.

Journal de Médecine de Bordeaux

October 26, LXXXIV, No. 43, pp. 687-700

63 Prophylaxis in Obstetrics. P. Balard.

November 2, No. 44, pp. 701-716

64 Abnormal Respiration Rhythm. (Les altérations du rythme respiratoire.) P. Mauriac.

Lyon Médical, Lyons

October 26, XLV, No. 43, pp. 653-708

65 Fracture of the Wrist. (Fracture du scaphoïde du carpe avec luxation de son fragment supérieur et du semi-lunaire en avant et en dedans.) Jaboulay.

November 2, No. 44, pp. 709-748

66 Gall-Stones in Common Bile Duct. (La lithiase du cholédoque.) E. Villard and E. Perrin. Commenced in No. 42.

Presse Médicale, Paris

October 25, XXI, No. 87, pp. 865-876

67 Latent Spina Bifida. A. Broca.
68 Concentrated Solutions of Neosalvarsan in Syphilis. [illegible] P. Ravaut. pression du rôle noc

October 29, No. 88, pp. 877-884

69 Spondylosis and Spondylitis. J. Crespin.

November 1, No. 89, pp. 885-896

70 Action of Sodium Chlorid on Renal Secretion. H. Roger.
71 Polyneuritis and Edema in Native African Troops. L. Jullien.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

October, XXI, No. 10, pp. 289-310

72 Cesarean Section for Contracted Pelvis. L. Poulot.
73 *Puerperal Phlebitis. G. Keim.
74 Ruptured Extra-Uterine Pregnancy. G. Potherat.

73. **Puerperal Phlebitis.**—Keim has long affirmed that puerperal phlebitis may occur without infection, merely from the combined effects of the impeded circulation from the pregnant uterus and of intestinal auto-intoxication. The functioning of the intestines is hampered as well as that of the vessels by compression from the enlarged uterus, and the liver suffers also, directly or indirectly. One of the principal functions of the liver, its anticoagulation action, may be seriously impaired, and this invites thrombosis, that is, coagulation and accumulation of sediment at points where the blood-stream is most sluggish or where there are eddies and back currents.

Phlebitis and phlegmasia of purely toxic and mechanical origin simulate infectious affections of the kind, but they relieve the obstetrician and the nurse of direct responsibility for them and are generally inclined to be benign. Much can be done in prophylaxis. The intestines and the liver must be supervised with special care during the pregnancy and the uterus should be completely evacuated after delivery. Equally important are measures to reduce the tendency of the blood to abnormally early and excessive coagulation. He has been gratified with the results of organ therapy for this purpose, giving in an enema 100 gm. of fresh calf liver in emulsion in 250 gm. of water, to which 10 gm. of peptone have been added. This aims to induce an anticoagulation action from the calf liver to supplement the insufficient action in this line of the patient's liver. He regards this as a specific organ therapy, and has never had phlebitis develop in the cases in which the method has been applied and has witnessed the prompt relief of symptoms in cases of already developed phlebitis. Sobre-Casas has also reported equally favorable experiences with this form of opotherapy in puerperal phlebitis. Other means to combat the tendency to excessive coagulation may be useful likewise. During the pregnancy Keim insists on treatment of any intestinal trouble and constipation, especially if there has ever been a case of phlebitis in the family or the patient feels pain in the side, or has ever had signs of liver trouble. He warns that intra-uterine injection of any fluid is liable to induce an actual aseptic metrophlebitis.

Semaine Médicale, Paris

October 29, XXXIII, No. 44, pp. 517-528

75 Gas Cysts in the Intestines. (La pneumatose kystique de l'intestin.) F. Lejars.

Archiv für klinische Chirurgie, Berlin

CII, No. 3, pp. 563-860. Last indexed Nov. 8, p. 1754

76 *Cancer of the Large Intestine, Rectum Excepted. (Die chirurgische Behandlung der malignen Dickdarmgeschwülste.) W. Körte.
77 *Cancer of the Colon. J. Rotter.
78 *[illegible] mberg.
79 *[illegible] Schanz.
80 [illegible] Glass Stomach. (Die Curvatur- [illegible] K. Büdinger.
81 Resection of the Knee in Children. H. Alapy.

76. **Cancer of the Large Intestine Outside of the Rectum.**—Körte devotes nearly ninety pages to analysis of the 254 cases of cancer of the cecum and colon which he has encountered since 1890. The radical operation in eighty-three cases gave a mortality of 62.5 per cent. when the cancer was in the transverse colon and of 45.4 per cent. when located in the descending colon, but the mortality was only 26.4 per cent. when the cancer was at the sigmoid flexure, and only 16.6 per cent. in the thirty cases of cancer in the cecum or ascending colon. He tabulates these experiences in seventeen tables, comparing them with reports from other clinics. The average mortality in all is practically the same, about 30 per cent. The special dangers of cancer in the large intestine are due to the peculiar anatomic conditions and the difficulty of taking care of the contents. He reiterates that with acute obstruction the intestine should be opened in the simplest manner and the growth not removed until later. With chronic stasis and when the nourishment of the stump is defective, it is wiser to operate at more than one sitting. But when the bowel can be thoroughly evacuated and the blood-supply is adequate and the stumps can be united without traction, the resection and suture can be done in one sitting. The prospects for a permanent cure are comparatively favorable with cancer of the large intestine; he has 27.7 per cent. surviving for more than three years in his eighty-three operative cases. In the majority of the permanent cures the cancer was in the sigmoid flexure or ascending colon or cecum. He cites the reports from fifteen clinics, showing 38.3 per cent. surviving over three years, among 434 patients treated by resection; in some the interval since has been up to eighteen years.

77. **Cancer of the Colon.**—Rotter compares his experience in 160 cases with Körte's and gives the details of forty-nine. He classifies the cases according as there was ileus or not. The mortality with ileus is from 70 to 79 per cent., while without it the mortality was only 20 per cent. He emphasizes the advantages of ileotransversostomy for tumors in the right colon; he has had no mortality with this during the last four years, and no mortality at any time from ileosigmoidostomy in the six cases in which conditions called for this technic.

78. **Intracranial Extravasation of Blood.**—Nunberg emphasizes the importance of suspecting rupture of the middle meningeal artery in every case of trauma of the skull, and reports eight cases from the Freiburg clinic which show that an epidural hematoma may develop and even prove fatal from compression of the brain without inducing the typical symptoms. In place of the typical symptoms of pressure on the brain there may be merely vague manifestations which must be regarded as equivalents for the classical symptoms. In some of his own cases the motor restlessness of the patients was striking; this symptom has been noticed by others, and he urges its importance as a sign of injury of the meningeal artery in dubious cases. Other warning signs are transient changes in the pulse-rate, the pulse growing slightly slower or irregular at times. Another important sign that must be sought for is contralateral disturbance of the oculomotor muscles when there is a bruise in the parietal region. An operation to relieve the pressure on the brain should not be deferred to wait for all the signs of pressure on the brain to develop; puncture or exploratory trephining should be considered whenever there are grave manifestations. He adds in conclusion that the puncture or exploratory trephining should be done freely and extensively; a hospital environment is not necessary. In only one of the eight cases he reports was the classic picture presented, and consequently no attempt at operation was made, and seven of the eight patients died. In the other case, which may be regarded as a spontaneous cure, Korsakoff's psychosis developed later. In only one of the cases was the pulse typical of pressure on the brain; in two patients not one of the classical symptoms could be detected.

79. **Scoliosis.**—Schanz's article fills nearly a hundred pages and is accompanied by numerous illustrations; it was read at the recent international congress at London. He says that recovery from ordinary benign scoliosis is the rule under any treatment, without any treatment, or in spite of any treatment, and rachitic scoliosis is also under our control if the patient comes into our hands early enough so that the rachitis can be cured in time. But constitutional scoliosis is another matter. We may succeed in arresting the deforming process but we cannot guarantee that this cure will persist, as the scoliosis is the result of unknown processes inside the body. He thinks we have accomplished in the treatment of scoliosis about all that is possible, and for further progress we must look to pathology. The cause of constitutional scoliosis must be some morbid process severely injuring the bone tissue of the vertebrae and thus reducing their weight-bearing capacity. Of what nature is this process? To call it tardy rachitis does

not answer this question, for the clinical course and the clinical findings of constitutional scoliosis are very different from those of true rachitic scoliosis. As long as we class together habitual scoliosis, the congenital, the static, the paralytic and scoliotic sciatica, we may expect confusion—if you eat chocolate and cheese off the same plate, he remarks, you will never know exactly how each tastes.

He is convinced that the school does not bring on scoliosis but rather tends to prevent it by reducing the demands on the spine for certain hours of the day. Vertical handwriting, special desk-seats, reform in dress, and special gymnastic exercises do not banish scoliosis from the schools. We find as many cases of curvature of the spine in schools where all this is done as in those in which nothing of the kind is attempted. In treatment, the indications in the individual cases presented by the developing and the already developed deformity form the most important and most responsible elements for treatment and the most interesting, as each case must be strictly individualized as he shows by illustrated descriptions of the course of a number of cases. He warns that gymnastic exercises are liable to do harm in some cases, and that the benefit apparently realized is a deceptive correction. The courses of special gymnastics for curvature of the spine should be restricted to comparatively strong children and to cases in which the weight-bearing balance has not been too seriously upset.

Berliner klinische Wochenschrift

October 27, L, No. 43, pp. 1977-2024

82 *Chronic Otitis Media. (Chronische Mittelohreiterung.) D. Schwabach.
83 *Benzol in Local Treatment of Cancer. G. Kiralyfi.
84 Retropharyngeal Tuberculous Lymph-Node. E. Heymann.
85 The Shock with Various Methods of Anesthesia. (Vergleich der unmittelbaren und Nach-Wirkungen der Spinal- und Lokalanästhesie mit denen der Inhalationsanästhesie hinsichtlich des Shocks und psychischen Shocks.) Y. Henderson (New Haven).
86 Present Status of Treatment of Cancer. (Behandlung der bösartigen Geschwülste.) F. Blumenthal. Commenced in No. 42.

82. Chronic Otitis Media.—Schwabach describes in general the pathology and treatment of chronic disease of the middle ear. He says that even when it is possible to cure the old otorrhea and heal up the perforated membrane, yet generally the hearing is left permanently impaired. More frequent are the cases in which the suppuration seems to be cured but the perforation in the membrane does not close and thus it provides an opening for entrance of infection, bringing back the old trouble. He agrees with Wilde that so long as there is discharge from the ear we can never say how, when and where it will end nor to what it may lead. He gives directions for cleaning out the secretion, and says that Bezold's method frequently cures the old affection and in the simplest way. It aims to cleanse the secreting surface from all sepsis germs and exclude it from new influx of germs from the air. He accomplishes this by injecting a boric-acid solution until the outer passages and tympanum are cleansed. Then after thorough drying with the air douche, he insufflates finely pulverized boric acid and pours more into the outer passages which he then plugs with medicated cotton. This procedure is repeated as often as the cotton is moistened with secretion. Schwabach says that since he has been using this method he has had no need for local astringents, but he warns that it should be done by the physician and never given over to the patient. This method fails of course when there are other complications and he discusses the means to meet these.

83. Benzol in Cancer.—Kiralyfi reports two cases of inoperable recurring mammary cancer in a man and a woman, in which he applied benzol, suggested by its action in leukemia. In both cases the cancer tissue was destroyed by the direct contact with the benzol, but the cancer tissue beyond continued its course unmodified. Benzol has evidently a remarkable influence on the cancer cells, but this is merely a local action; there can be no question of a curative influence on the cancer from the benzol. He says that this applies also and in the same way to Roentgen therapy, thorium or any other nonsurgical means of treatment.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

XVII, Nos. 4-5, pp. 297-602. Last indexed Oct. 11, p. 1412

87 *Tuberculosis of the Prostate. F. A. Hesse.

87. Tuberculosis of the Prostate.—Hesse's analytic and critical study of the literature on this subject fills this entire number of the *Centralblatt.* He classifies the literature alphabetically by the authors—a total of 1,201 titles. The testimony all points to the superiority of operative treatment, radical removal of the focus into sound tissue. Concomitant pulmonary tuberculosis often becomes materially improved when the focus in the prostate has been done away with. Conservative measures may relieve and improve the prostate lesion, but only in the rarest instances is a cure realized without an operation.

Correspondenz-Blatt für Schweizer Aerzte, Basel

October 25, XLIII, No. 43, pp. 1345-1376

88 Mountain Climate from the Therapeutic Standpoint. (Indikationen und Kontraindikationen des Hochgebirges im Allgemeinen.) C. Stäubli.

November 1, No. 44, pp. 1377-1408

89 The Morally Defective. (Wesen und Behandlung der moralisch Schwachsinnigen.) K. Gehry.

Deutsche medizinische Wochenschrift, Berlin

October 30, XXXIX, No. 44, pp. 2129-2176

90 *Changes in Our Estimation and Use of Lavage of the Stomach. (Ueber Wandlungen in der Lehre von den Magenausspülungen.) I. Boas.
91 *Etiology of Variola and Vaccinia. E. Paschen. (Ueber Aufschliessung, Isolierung und Einengung von reinem vakzinalen Virus—Paschens Körperchen—aus tierischen Schutzblattern—Kuhpocken—auf mechanischem Wege.) G. Paul.
92 *Abderhalden's Serodiagnosis of Mental Diseases. (Weitere Untersuchungen mit dem Abderhaldenschen Dialysierverfahren an Geisteskranken.) J. Fischer.
93 *Action of Light on the Animal Organism. L. Pincussohn.
94 Roentgen Diagnosis of Syphilis of the Aorta. F. Eisler and S. Kreuzfuchs.

90. Lavage of the Stomach.—Boas comments on the way in which experience has shown the advisability of restricting the use of the stomach-tube in treatment of chronic stomach affections to a preliminary clearing out of the organ, to start the course of dieting. Repeated lavage of the stomach is not required afterward with mild degrees of stenosis. Once cleared out, there is no further use for the stomach-tube and it merely torments the patient. The stomach will take care of fluid food for a week, and then soft foods can be added, gradually increasing the diet until the tolerance limit is reached, the so-called microretention. This should then be the standard diet, and be kept up for weeks. The case is different with advanced uncontrollable stenosis, but repeated lavage is not necessary even here as the surgeon should be called in without delay. If the patient refuses an operation, the diet should be regulated so that lavage will not deprive the organism of too much nourishment. A combination of purgatives with antiseptic rinsing out of the stomach may be useful, but he never gives the antiseptic until after the stomach has been thoroughly rinsed out. He has found magnesium salicylate the best for the purpose (from what can be taken up on the tip of a knife to a teaspoonful, three times a day). With chronic stagnation from benign and malignant stenosis of the pylorus, simple expression of the stomach content without pouring in a fluid has proved as effectual as lavage in ten years of experience with this measure. The difference between the effect realized is immaterial; patients who have tried both lavage and dry expression always prefer the latter. The technic is simple and easy, the patients requiring no help from without as they readily learn to swallow the tube. He adds that a large number of ingenious apparatus have been invented for autolavage, and illustrated descriptions are given of them in the text-books, but no one seems to use them.

He does not think that it is mere chance that he has had no cases of tetany in the last ten or fifteen years since he has restricted the use of lavage to the above indications. Even with chronic gastritis, the tendency to catarrh is not affected by lavages; this can be controlled far better by suitable diet, mineral waters and avoidance of irritants. Benefit from lavage in nervous affections of the stomach is probably the effect of suggestion alone.

91. **Parasites of Variola and Vaccinia.**—Paschen and Paul describe their latest research on the minute bodies which Paschen regards as the causal agent of variola and vaccinia. Paul gives an illustrated description of his apparatus for demonstrating ultramicroscopic forms of virus.

92. **Serodiagnosis of Mental Diseases.**—Fischer reports a further series of eighty-seven patients with dementia praecox, general paresis or epilepsy, tested by the Abderhalden technic for protective ferments. The results confirmed in every case the specific nature of the ferments elaborated in these affections. In the paresis cases, the serum digested cortex tissue but never genital-gland tissue. In the sixteen epileptics, cortex tissue was digested in only one case. In the dementia praecox cases, cortex tissue was digested in the majority of cases, and thyroid tissue in ten of thirty-seven examined, and sexual-gland tissue in fifty-six of fifty-seven examinations. In fifteen cases, both testicle and ovary tissue was tested, with the result that the serum of men digested only testicle tissue, female serum only ovary tissue, and never testicle tissue. Fischer has applied the Abderhalden technic 700 times.

93. **Action of Light on the Human Organism.**—Pincussohn has continued his previously reported research on the action of light after sensitization with eosin or other fluorescent stains. He experimented with dogs, cats, guinea-pigs and rabbits, the results confirming the intensification of the action of light on tissues and organs by this means. It opens a prospect of being able to apply light in therapeutics with more accurate doses and aims than has hitherto been possible, thus magnifying the therapeutic effect of ordinary and artificial light.

Medizinische Klinik, Berlin

October 26, IX, No. 43, pp. 1751-1792 and Supplement

95 Pseudoneuralgia. M. Serog.
96 *Defects of Speech. (Einige für den praktischen Arzt wichtige Kapitel der Sprachheilkunde.) E. Fröschels. Commenced in No. 42.
97 Dietetic Treatment of Gout. P. Le Gendre.
98 Abderhalden's Serodiagnosis of Tuberculosis. F. Jessen.
99 Vaccine Therapy in Gonorrhea. A. Brandweiner.
100 Syphilis of the Nervous System. ("Lues nervosa.") F. Moerchen.
101 Radial Paralysis from Lead Poisoning. (Radialisparesen bei Bleiarbeitern.) H. Zondek. Concluded in No. 44.
102 The Various Tests for Sugar in the Urine. (Verwendung der Reduktionsmethoden zur quantitativen Harnzuckerbestimmung.) J. Meinertz.
103 Dermatology for the General Practitioner. (Dermotherapeutische Winke für den Praktiker.) J. Schäffer.

96. **Treatment of Defects in Speech.**—In the course of this study of what the general practitioner can do to ward off and cure defects in speech, Fröschels emphasizes that much can be done in preventing the development of stuttering. When a child hesitates and repeats the last syllable over and over, it is because its little brain cannot keep up with its speech; it keeps repeating the last syllable until it can think of the proper word to go on with. This is not pathologic, but it becomes so if the child's attention is drawn to this habit. The family and friends must have impressed on them with great emphasis that it is absolutely necessary to refrain from attracting the attention of the child to this slight defect in its speech. It must not be corrected, nor forced to repeat the word over again, and, above all, no impatience should be manifested. If the child's attention is once attracted to this simple repeating of the last syllable the trouble becomes confirmed and we have the severe disturbance of stuttering which may brand the individual through life and make him hold aloof from his kind.

Monatsschrift für Kinderheilkunde, Berlin

XII, No. 7, pp. 347-452

104 Four Cases of Congenital Fragility of Bones. (Osteopsathyrosis Idiopathica.) E. Klose.
105 *"Salt Fever" in Infants. (Kochsalzfieber bei Säuglingen.) G. Jörgensen.
106 *Rôle of the Sympathetic Nervous System in Infants' Diseases. (Anteilnahme des sympathischen Nervensystems an den Erkrankungen des Säuglings.) E. Tezner.
107 Formation of Antibodies Not Affected by Artificial Feeding. (Ernährung und Antikörperbildung.) H. Kleinschmidt.
108 *Significance of the Wassermann Reaction in Wet-Nurses. (Bedeutung der Wassermannschen Reaktion bei der Verwendung von Ammen.) P. Wesener.

105. **Salt Fever in Infants.**—Jörgensen reviews the literature that has appeared recently in regard to fever caused by giving salt intravenously as physiologic salt solution or by mouth. He gave injections to thirty-two children and concludes from this experience that this fever is caused, not by the salt, but by the bacterial content of the water. When the solution was made with freshly distilled water there was no salt fever. This is of considerable practical importance as physiologic salt solution is so frequently given as a stimulant in various diseases. As to its administration by the mouth, it has always been given by previous experimenters in very large doses. In such doses it increases the permeability of the intestinal wall to all substances, and the fever may have been due to increased absorption of other products from the intestine, including some possibly of bacterial origin.

106. **The Sympathetic Nervous System in Infant's Diseases.**—Tezner has frequently observed in very sick infants an injection of the vessels of the conjunctiva, and necropsy has revealed congestion in all the vessels of the head. This he believes is due to decreased tone of the cranial sympathetic nervous system. This appears only in the severe acute intestinal intoxications. It is never present in chronic intestinal disturbances. Prematurely born infants have a greater tendency to atony of the sympathetic during their first three months than children born at term. This lack of tone in the sympathetic system indicates a grave prognosis.

108. **Significance of the Wassermann Reaction in Wet-Nurses.**—Wesener concludes that a negative or weakly positive Wassermann reaction must not be taken as deciding the question for or against allowing a woman to nurse a non-syphilitic child. The decision must be based on the clinical symptoms, etc., as well.

Münchener medizinische Wochenschrift

October 28, LX, No. 43, pp. 2385-2440

109 *Differences and Analogies between Cells of Different Organs. E. Abderhalden.
110 Participation of Sweat Glands in Corporeal Reflex Phenomena of Emotional Origin, Especially the Psychogalvanic Phenomena. J. Leva. (Ueber die physikalisch-chemischen und physiologischen Vorgänge im menschlichen Körper, auf denen der psychogalvanische Reflex beruht.) M. Gildemeister.
111 Reinfection with Syphilis after Salvarsan. (Zur Biologie der humanen Syphilis.) Gennerich. Concluded in No. 44.
112 *Salvarsan in Syphilis. F. Berger.
113 *Camphor in Pneumonia. H. Leo.
114 Technic for Autoplastic Exclusion of the Pylorus. (Ueber unsere Dauerresultate bei der Pylorusumschnürung mittelst Faszie, Ligamentum teres hepatis und Netz nach Wilms als Ersatz der unilateralen Pylorusausschaltung.) K. Kolb.
115 Telecardiography. (Der Telekardiograph, ein Ersatz des Orthodiagraphen.) L. Huismans.
116 *Prolapse of Rectum in Children. (Zur Operation des Mastdarmvorfalls bei Kindern.) H. Lengnick.
117 Workingmen's Compensation and Health Insurance in Roumania. (Handwerker- und Arbeiterkrankenversicherung in Rumänien.) E. Toff.
118 The Artist and the Physician. (Die Hohe Schule für Aerzte und Kranke. VIII.) M. Nassauer.

109. **Specific Structure of the Cells.**—Abderhalden shows that it need not be regarded as so wildly improbable that the building-stones of the different organic compounds may be arranged in a specific manner for each organism. Untold billions of combinations of specific building-stones must exist if each kind of cell is to be credited with its individual protein, demonstrable by biologic tests. We know about twenty of these different building-stones, the amino-acids, and we meet ever the same amino-acids throughout nature. He shows by mathematical computations the exact figure of possible combinations of even twenty different amino-acids; it is in the quintillions. Consequently, the assumption that every kind of cell has a special structure, characteristic for itself alone, is well within the possibilities. Comparative research has shown that cells which have the same tasks in the different individuals of the animal species have certain points of similarity in their structure. The assumption is therefore possible that besides their entirely specific individual structure, certain groups inside the cell exist which control certain functions. Throughout the whole animal series the organs

on which certain tasks devolve, alike through the animal series, all possess certain protein substances which are alike in all. This is evident from the fact that serum which contains protective ferments against a certain organ tissue digests this tissue, not only when it is derived from an animal of the same species, but it also digests the corresponding cell protein of entirely different species. For example, in the serodiagnosis of pregnancy the placenta of one animal can be used for other kinds of animals. He calls this a new biologic law and emphasizes its practical importance as it permits the organs of different animals to be used in clinical biologic tests. He remarks that while everything else in the cell may be different, yet one single protein may be identical and this gives the characteristic response. He compares it to the way in which a musician can detect the sound of different instruments in orchestral music while the unpracticed ear hears only the music as a whole.

112. **Salvarsan in Syphilis.**—Berger combines salvarsan and mercury inunctions and here reviews his experience in a military hospital and recent reexamination of numbers of patients from 16 to 22 months afterward. Although he regards it as almost certain to abort the disease yet he insists on chronic intermittent treatment for five years. If the Wassermann reaction is repeatedly negative, he gives mercurial treatment alone, but if it can be made positive he interposes a supplementary course of salvarsan during the second year. About three-fifths of all syphilitics can count on a permanent serologic cure. Disagreeable sensations in the gums were observed in a few cases, a bitter taste in the mouth, pulsation in the gums, and he warns that when the gums feel hot and prickle the salvarsan should be suspended. These sensations in the gums in one case preceded by two days a fatal encephalitis after salvarsan. In one case an almost somnambulistic condition followed the salvarsan. No secondary symptoms or positive Wassermann were found in any of the patients followed to date since 1910-11 who were given treatment in the primary stages. All but one have been free from recurrence among the thirty-six in the secondary stage. Negative Wassermann dropped from 70.4 per cent. to 61 per cent. in those with secondary syphilis one year after infection, and from 77.5 per cent. to 58 per cent. in those in the secondary stage two, three or more years after infection.

113. **Camphor in Pneumonia.**—Leo was able to protect numbers of mice against pneumococcus infection by subcutaneous injection of a saturated aqueous solution of camphor; the results were less constant with rabbits. These experiences suggest that camphor should be given systematically from the start in pneumonia. He thinks it is able to kill the pneumococci in the blood stream and promote reabsorption of the pneumonic exudate. Camphor has also a marked action in increasing the ventilation of the lungs, the amount of air inspired being very much larger under the influence of the camphor, while the drug stimulates the action of the heart and more blood is thus pumped into the lungs. As twitching was noticed in the animals with a dose of 5 c. c. per kilogram of body weight, smaller proportional doses must be used in the clinic, about 150 or 200 c. c. for a weight of 145 pounds. This represents 0.142 gm. of camphor as each 100 c. c. of the saturated aqueous solution contains 0.21—0.28 gm. camphor. He prefers Ringer's fluid instead of plain water for the vehicle. He quotes Lenzmann to show that 75 c.c. corresponding to 0.1 gm. camphor, can be injected intravenously without disturbance. Lenzmann is soon to publish a report of his experience in this line. Boehncke has already reported favorable experience with camphor plus pneumococcus serum.

116. **Prolapse of the Rectum in Children.**—Lengnick calls attention to the excellent results he obtained in a recent case by drawing up the passage above the anus by means of a strip of fascia taken from the child's own thigh, similar to Thiersch's ring technic.

St. Petersburger medizinische Zeitschrift

October 28, XXXVIII, No. 20, pp. 241-252

110 Uterine Hemorrhage. (Ueber Metrorrhagien.) H. Luchsinger.

Zeitschrift für Kinderheilkunde, Berlin

IX, No. 1, pp. 1-86. Last indexed Nov. 1; p. 1673

120 An Eruption Preceding Measles. (Ueber das Vorexanthem bei Masern.) H. Koch.
121 Occurrence of Hippuric Acid in the Urine of Infants. S. Amberg and H. F. Helmholz.
122 Reaction of Mother's Milk Is Neutral. (Ueber die Reaktion der Frauenmilch.) H. Davidsohn.
123 *Treatment of Stenosis of the Pylorus in Infants. R. Hess.
124 *Specific Nephritis in Congenital Syphilis. H. Hintzelmann.
125 Sugar Content of Children's Blood. (Der physiologische Blutzuckergehalt beim Kinde nach der Mikromethode von Bang.) Götzky, H. T. Bing and O. Windelöw.
126 The Cutaneous Tuberculin Reaction Is Specific. (Zur Frage der Spezifität der cutanen Tuberkulinreaktion nach v. Pirquet.) M. Kasahara.

123. **Stenosis of the Pylorus in Infants.**—Ibrahim's figures for the mortality from stenosis of the pylorus in infants are 46 per cent. for those treated medically and 54 per cent. of those operated on. Hess describes two cases operated on by a method devised by Ramstedt, which consists simply in cutting the pyloric ring sagittal to the intestine leaving the mucous membrane intact. The abdomen is then closed. The operation is so much simpler and shorter than any other that it offers hope of reducing the high mortality in this condition.

124. **Specific Nephritis in Congenital Syphilis.**—Hintzelmann accepts the existence of a specific chronic nephritis due to hereditary syphilis. He examined forty-one persons in the secondary stage and found that fourteen of them had nephritis. He gives the case-histories of these fourteen. Other causes for the nephritis were excluded. In twenty-eight tertiary cases examined, only three of the patients had nephritis. In two of these the nephritis was probably due to inunction treatment with mercury which sometimes causes symptoms of nephritis. He states that internal administration of mercury never seems to cause nephritis.

Zentralblatt für Chirurgie, Leipsic

November 1, XL, No. 44, pp. 1705-1736

127 Alcohol in Prevention of Acute Cocain Poisoning. A. Herzfeld (New York).
128 Exclusion of Pylorus. (Die Intraparietomuskel-Pyloropexie als Methode der Pylorusausschaltung bei Gastroptose mit Gastroektasie.) C. Mariani. (Verschluss und Suspension des Pylorus nach Gastroenterostomie mittels des Lig. teres hepatis.) Hercher.
129 Technic for Nephrotomy and Resection of the Kidney. S. Rubaschow.

Zentralblatt für Gynäkologie, Leipsic

November 1, XXXVII, No. 44, pp. 1613-1644

130 Correct Language in Technical Communications. (Ueber unsere Schrift- und Vortragssprache.) C. v. Wild.
131 *Resection of the Promontory for Permanent Enlargement of the Pelvis. H. H. Schmid.
132 Case of Rupture of the Uterus during Delivery Traced to Gonorrhea. A. Solowij.

131. **Resection of the Promontory to Enlarge Contracted Pelvis.**—Schmid and Rotter both conceived the idea about the same time that it might prove possible to enlarge permanently a contracted pelvis by cutting a slice off the projecting promontory, and Schmid has performed the operation on eight women. One of them has since passed through another pregnancy and he here reports the case in detail. It confirms the assumption that it is possible in this way to reduce the projection of the promontory by 2 cm. and permit delivery of a living child by the natural passages. As a rule, the operation is done supplementary to the classic cesarean section, and consequently it can be applied only when there is no suspicion of infection. A tendency to sciatica for a time was noted in one of the patients but it proved transient, and in none of the eight women was there any disturbance in the gait or pain in standing, walking or stooping over. The fear that callus would develop and annul the effect of the operation has proved groundless. At the operation the uterus is drawn forward and pushed up; the posterior sheet of the peritoneum is incised for 10 cm., and the assistant holds the wound open and the sigmoid flexure out of the way; no instrument proved so convenient for this as the fingers in his experience.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 26, XXXIV, No. 128, pp. 1335-1350

133 *Primary Tuberculous Process in Shaft of Tibia; Recovery after Resection. A. Ruffo.

October 28, No. 129, pp. 1351-1358

134 *Epinephrin and Abortion. (Puo l'adrenalina provocare l'aborto?) T. Silvestri.

October 30, No. 130, pp. 1359-1366

135 *Extreme Rarity of Recovery from Sleeping Sickness. (Sulla guaribilita della tripanosi o malattia del sonno.) V. Grossule.

133. **Tuberculous Diaphysitis.**—As primary tuberculous processes so seldom start in the shaft of a long bone, Ruffo suspected syphilis in the apparently healthy man when the left tibia began to bulge in two places, with a dull pain in the region whenever the leg was used much. A vigorous course of mercury caused slight transient improvement—probably from the incidental resting of the leg—but then the process continued to progress in the poorly nourished patient. The limb was never tender on moderate pressure, and there was no fever. Roentgen examination showed in the middle third of the tibia the bone rarefied at two adjacent protruding points on the front of the bone. Recovery was soon complete after excision of the foci. Tuberculosis generally avoids tissues that are extremely vascular or extremely non-vascular; Küttner in 2,100 cases of tuberculous processes in bone encountered only six in which the primary location was in the shaft of a long bone.

134. **Epinephrin and Abortion.**—Silvestri remarks that recent reports in the literature of the benefit from epinephrin in osteomalacia, in uncontrollable vomiting and other disturbances in pregnant women, led him to give epinephrin in such cases, as all the writers emphasized the harmlessness of this treatment in the dosage advised. Two recent experiences, however, tend to contradict the assumption of the harmlessness of this treatment: Two women in the second month of pregnancy were given a mild course of epinephrin and calcium salts on account of an incipient apical process and defective nutrition. Each aborted in less than a month. He has given this treatment to other women in later months of pregnancy and never before witnessed any tendency to abortion. One of the present patients had taken it without disturbance during the last three months of a preceding pregnancy.

135. **Sleeping Sickness.**—Grossule writes from the Belgian Congo district that persons who have apparently recovered from sleeping sickness are liable still to harbor the parasites when reexamined years later. In one such case no trace of them could be found two years after treatment but reexamination two years later disclosed a few trypanosomes in the blood and the cerebrospinal fluid although the man has shown no symptoms at any time since his supposed recovery. Only 100 survived to leave the hospital of the 1,100 patients in his charge, and only thirty-eight of these were clinically cured. In this group fifteen have already shown signs of returning trouble and he is convinced that it is only a question of time when the disease will rouse anew from its long latent stage in the others.

Tumori, Rome

III, No. 1, pp. 1-160

136 *Pathogenic Blastomycetes in the Etiology of Carcinoma. D. B. Roncali.
137 *Carcinoma and Fever. M. Giordano.
138 Pathogenic Action of the Saccharomyces Neoformans Sanfelice. M. Magnini.
139 Perithelial Sarcoma of the Left Subclavicular Muscle. R. Brancati.
140 *Autolysates of Embryonal, Fetal and Cancer Tissues in Treatment of Cancer, and History of Evolution of Basal Theory. (Evoluzione della teoria del disquilibrio oncogeno e della chemoterapia istogena per la genesi e la cura dei tumori maligni.) G. Fichera. Concluded in No. 2.

No. 2, pp. 161-308

141 *Salomon-Saxl Urine Sulphur Test for Cancer. M. Pasetti.
142 *Technic for Meiostagmin Test for Cancer. G. Di Quattro.
143 *Pararenal Tumors. V. Saviozzi.

136. **Etiology of Cancers.**—Roncali sums up his extensive research and review of the research of others in the statement that the evidence to date seems to indicate that several parasites and consequently several toxins are involved in the causation of cancer. The blastomycetes and their toxins represent only one of the numerous etiologic factors concerned.

137. **Cancer and Fever.**—Giordano tabulates the details of a hundred cases of cancer in which the temperature was studied; fever was evident in 60 per cent. for which no explanation could be found except the cancer itself. In some cases the temperature began to go up in the evening, accompanied by severe headache, and in the course of the night, the temperature dropped, with profuse sweating, and in the morning was a trifle below normal. In other cases the temperature kept high for a week or so, with an intermittent type of fever. In still others the temperature kept throughout of an intermittent type; this was most common with sarcoma; in one case of epithelioma of the uterus the temperature fluctuated according to the quartan fever type. In the majority of cases, however, when the temperature was above normal it kept at an even figure. This continuous type of fever may mislead in the diagnosis unless physicians bear in mind always the possibility of a continuous high temperature in the prodromal period and during the course of malignant disease.

140. **Autolysates of Embryonal, Fetal and Cancer Tissues in Treatment of Cancer.**—Fichera here gives the history of the evolution of the theory on which he bases his treatment of malignant disease. (It was described fully in THE JOURNAL, Aug. 6, 1910, p. 545, and June 10, 1911, p. 1769, and the technic was given Jan. 18, 1913, p. 228.) He states that evidence is constantly accumulating to sustain the assumption that the cause of malignant disease is a loss of balance between the chemical and morphologic factors of growth, and that the balance can be restored by supplying from without certain constituents or derivates of the cells—the histogenous therapy of malignant disease. Blumenthal, Lewin and Pinkuss have reported favorable results from treatment along these lines, and many others have confirmed the action of autolysates of normal or cancerous tissues in inducing involution of experimental and clinical cancers. Fichera emphasizes that this histotherapy or histogenous chemotherapy is based on a different principle from that of vaccination; among other reasons, on account of the fact that the latter presupposes parasitic origin, while Fichera declares that there is no conclusive evidence to date incriminating parasites in the origin of cancer. On the contrary, everything tends to prove that certain organs have a tumor-destroying property. In the healthy, the immune and the cured, these organs are well developed and active; in the aged, the cachectic and those with advanced tumors, these organs are shriveled and inactive. Fichera and his coworkers have demonstrated this, they think, by their study of the organs of persons with cancer at different stages; by direct grafts in different organs; by the property of immunizing and curing and the degree of this property manifested by extracts of various organs and tissues, normal or pathologic; by the effect of removal of the single organs on the susceptibility or resisting power of the animal to cancer, and on the changes in the tumor-destroying power of the serum of healthy animals injected with the tissue extracts.

141. **The Salomon-Saxl Urine Sulphur Test for Cancer.**—Pasetti applied the Salomon-Saxl technic in 200 cases, including 46 cancer cases, 35 of surgical tuberculosis, 92 of other surgical affections, and 27 with syphilis, giving a positive Wassermann reaction. He tabulates the details of them all. Among the syphilitics the response was constantly negative except that 2 gave a dubious reaction; in surgical tuberculosis the response was negative in over 88 per cent. and in over 89 per cent. of the 48 patients with hernia, while the reaction was constantly positive in 68.7 per cent. of the carcinoma patients and in 35.7 per cent. of the sarcoma cases. The test is so simple and easy, he says, and the findings are so frequently positive in case of cancer and negative in its absence, that the reaction merits high consideration in differentiation of malignant disease. (The technic for it was described in detail in THE JOURNAL, May 27, 1911, p. 1593.) Pasetti uses

a sedimentation glass with the tapering tip graduated in millimeters for estimation of the amount of the brownish sulphate of barium sediment thrown down. This represents the neutral sulphur in the urine which has been oxidized by the strong hydrogen dioxid, and he leaves the glass for twelve or fourteen hours before final estimation of the amount of sediment.

142. **Technic for the Meiostagmin Reaction.**—Di Quattro says that the livers of certain birds, rabbits, cats and other small animals may be used as the antigen in the meiostagmin test in place of the extracts of human pancreas or of cancer tissue hitherto deemed necessary.

143. **Pararenal Tumors.**—Saviozzi applies this term to tumors which originate in the fibrous or adipose capsule of the kidney and not in the kidney tissue proper. He has found records in the literature of eighty-two cases of the kind and tabulates them for comparison. In none was the correct diagnosis made beforehand. As a rule the tumor develops without pain, merely the discomfort from the encroaching growth until pains come on late. In some cases, however, pain is the first sign of trouble. In the personal case reported the patient, a woman of 57 had complained for a year and a half of penetrating pains in the right lower quadrant of the abdomen; then the tumefaction was discovered, but the operation did not follow until three years after the first sign of trouble. In only thirteen other cases were pains the initial symptom. The urine was normal throughout except in Lothheissen's and in Ranzi's cases in which the tumor had compressed the ureter and caused intermittent hydronephrosis. Compression of the bladder induced bladder symptoms in some cases; pollakiuria or retention of urine was noted in the last four months in Saviozzi's case. The legs frequently showed edema and ascites developed in a few rare cases. Two of the patients had fever and there was slight continuous fever in Saviozzi's patient, but it disappeared at once after the operation. Fluctuation was noted in eight of the cases but exploratory puncture failed to reveal fluid. The fluctuation generally led to assumption of an ovarian or echinococcus cyst. In the 69 operative cases nephrectomy was applied in 38 and the kidney was left intact in 12; there were 21 cases with a fatal outcome and 32 recoveries; recurrence is known in 3 cases and in 13 cases the final outcome is not known. The fatality in several cases was due to hemorrhage during or soon after the operation, and in Kümmel's case to hemorrhage the second day from injury of the spleen. In seven cases the conditions found at the operation forbade the complete removal of the tumor. The article is accompanied by three colored plates showing the findings in Saviozzi's case.

Brazil-Medico, Rio de Janeiro

October 15, XXVII, No. 39, pp. 414-425

144 Differential Diagnosis of Pott's Disease. M. Gesteira. Commenced in No. 38.

Semana Medica, Buenos Aires

October 9, XX, No. 41, pp. 813-868

145 Abderhalden's Serodiagnosis of Pregnancy. (La suero-reaccion del embarazo—Abderhalden.) J. A. Gabastou and W. Widakowich.

146 Sewage and Water Supply. (Eliminacion de los productos cloacales y residuos industriales. Progresos de la depuracion biologica en los diferentes paises.) P. J. Pando.

147 Cataract from Electric Accident. (Patogenia de la catarata por rayo y por descarga electrica.) M. Pannunzio.

148 Specialization in Medicine. J. S. Fernandez.

Norsk Magazin for Lægevidenskaben, Christiania

November, LXXIV, No. 11, pp. 1449-1600

149 *General Paresis in Boy of 10. A. Collett.

150 *Spontaneous Recovery of Renal Tuberculosis. (Kan nyretuberkulosen helbredes spontant?) F. Harbitz.

151 *Hodgkin's Disease. (Om malign lymfogranulomatose.) K. Motzfeldt.

149. **Juvenile General Paralysis.**—Collett gives two colored plates of the findings in the brain of a boy of 11 who had succumbed to general paralysis evidently the effect of inherited syphilis. The child had developed normally and was bright for his age until he was 7 years old. Then an operation was done on the lacrimal sac under general anesthesia, and almost at once afterward the boy's entire character and mentality changed and later the symptoms of general paralysis gradually developed with pupil phenomena and exaggerated reflexes, but no signs of focal disturbances. In connection with this case Collett reviews the literature on the subject of progressive paresis in children. Over 250 cases are on record and in 160 in which the details are known, inherited syphilis was certain in 105, probable in an additional twenty-five, possible in twenty and acquired syphilis was certain in ten instances. Puberty, the puerperium, trauma, masturbation or infectious diseases are stated to have been contributing factors in a number. His own case teaches the necessity of caution in administering a general anesthetic to a child with possibly an inherited syphilitic taint. A history of abortions preceding or following the birth of the child in question should be a special warning. The symptoms and course in children are about the same as in adults, but the pupils are more liable to be dilated rather than contracted. No treatment seems to do any good, he remarks; mercury does direct harm.

150. **Spontaneous Healing of Renal Tuberculosis.**—In routine necropsy work during the last few years, Harbitz found signs of an old tuberculous process in a kidney in twelve cadavers; it had evidently run its course and become encapsulated spontaneously, with what amounted to a clinical cure. In some of the cases the renal tuberculosis had existed for four, six, eight or ten years, and even twenty years in one instance. The processes were of all kinds from the ulcerative to the "sclerosing." In six of the cases the chronic process had become completely encapsulated and the pelvis and ureter were entirely obstructed. Of special interest is the finding that a tuberculous process in the bladder had evidently healed completely after the kidney lesion above had been thus walled off. The data presented reaffirm the rarity of primary tuberculous lesions in the bladder; also that the bladder becomes affected comparatively late in the course of renal tuberculosis, and also that the bladder process generally heals when the kidney process is removed or encapsulated.

In one of the cases reported the tuberculous lesion in the kidney had perforated outward, and yet the whole had healed spontaneously and the fistula closed. In four of the cases the kidney process had not caused appreciable clinical symptoms or merely slight transient manifestations. A tuberculous focus in the kidney is a constant menace to the rest of the organism; two of the patients succumbed to secondary meningitis or miliary tuberculosis, and three to nephritis in the other kidney. Another point brought out by this material is that congenital malformations or displacement of the kidney seem to play an important part in inviting the development of a tuberculous process in a kidney. This was evident in three of the above cases.

151. **Hodgkin's Disease.**—Motzfeldt gives an illustrated description of a number of his ten cases of malignant lymphogranulomatosis, and compares them with similar cases on record. He regards it as a clinical entity, saying that there is no evidence that connects it with tuberculosis, not even with attenuated tubercle bacilli or their toxins or Much's granula. The testimony to date shows that it resembles most the infectious granuloma, but it does not seem to be of the nature of a neoplasm, although a malignant nature seems evident. A transition to leukemia or sarcoma has never been observed. The ages of his patients ranged from 8 to 57.

Ugeskrift for Læger, Copenhagen

October 23, LXXV, No. 43, pp. 1717-1752

152 Constancy of the Reflexes. C. H. Würtzen.

153 Case of Hysteria Magna. E. Clausen.

October 30, No. 44, pp. 1753-1776

154 Improved Technic for Blood Count. (En Modifikation af Hayems Vædske.) G. Jørgensen.

Upsala Läkareförenings Förhandlingar

XVIII, No. 7, pp. 457-548. Last indexed Oct. 25, p. 1582

155 Improved Ophthalmometer. (Om mätning af främre ögonkammarens djup med ett nytt, för kliniskt bruk afsedt [illegible] F. Lindstedt.

156 [illegible] eutic Pneumothorax. (Eine Kanüle zum [illegible] gen nebst kritischen Betrachtungen über [illegible] ngewandten Methoden.) E. Lindhagen.

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THE SCIENTIFIC BASIS FOR VACCINE THERAPY *

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As a justification for any method of treatment, especially if the method is novel and all-inclusive in the field of proposed application, it is essential that those who apply the method should be convinced that it is based on adequate experience. This basis may be that established by the statistical method of clinical medicine, or it may be that of definite experimentation leading to logical clinical application.

By the statistical method of clinical medicine is meant the study by many physicians of the efficacy of a certain form of treatment as applied to a great number of persons suffering from the same disease. Though we describe treatment so based as empiric in method, such description does not necessarily minimize the importance of the method of treatment or of study on which it is based. Too many remedial agents, though introduced at first in curious and diverse ways, have stood the test of the statistical method to justify the position that clinical experience is not an adequate test. The method, however, is a slow one. Its success is dependent on so many details that not infrequently, in the case of a method which attracts such wide attention as has vaccine therapy, the results are as apt to be contradictory through lack of uniformity in method as they are to be exaggerated through the enthusiasm of the individual.

In the field of vaccine therapy, as practiced in this country to-day, it cannot be denied that this contradiction exists and that opinions of the greatest diversity may be obtained. On the one hand, the enthusiasm of its advocates has no limit, and on the other, even among thoughtful physicians, there are few who, while conscious of the exaggerations of the scope of application and the results of vaccine therapy, are not in doubt concerning their duty in the use of the method. These turn to the second guide to rational therapy—the experience gained by laboratory and allied experimentation—and ask what definite scientific basis we have to rest on while we wait for the verdict of the slower statistical method of clinical medicine. But here the laboratory hesitates, and with some embarrassment urges only caution. It can point with pride to the scientific basis for prophylactic vaccination, but has little to offer in the way of support of therapeutic vaccination either as to its efficacy or as to its harmfulness.

The history of small-pox inoculation and vaccination affords an interesting combination of clinical observation—both statistical and experimental—in the establishment of the first known form of prophylactic vaccination. Later Pasteur's experimental demonstration of the principle that a weakened virus (anthrax, chicken-cholera) capable of producing the disease in a mild form renders the host immune from future infection supported the common popular experience concerning naturally acquired immunity, and also the experience with small-pox.

In more recent years the successful use of vaccination against typhoid fever has offered an excellent demonstration of the value of prophylactic vaccination. The principle of prophylactic vaccination is sound, since it agrees with the knowledge concerning acquired immunity based on the clinical (statistical) method as well as the method of the laboratory based on animal experimentation, and, moreover, in its practical application has been confirmed again and again by the statistical method of the clinic.

Concerning the scientific basis for prophylactic vaccination in the fields of its successful application there can be no question. To fortify an animal against a specific infection by producing, in mild form, the disease in question is a procedure against which no objection, scientific or ethical, can be raised. Quite different is the situation in regard to therapeutic vaccination, a procedure which, despite the fact that the idea originated with Pasteur and has therefore as a principle the support of which Pasteur's name and work offer, it is difficult to reconcile with many of the principles of immunity. But Pasteur's idea was not quite analogous to that on which modern indiscriminate vaccination is based. His antirabic vaccination was, it is true, a treatment after *infection*, but not after the development of the disease. The object was to develop rapidly an immunity after the individual has been bitten in the hope of preventing the full development of the disease—not the cure of the disease after it has developed.

The present wide-spread use of vaccines dates back only to 1902 and to A. E. Wright's advocacy of the use of dead bacteria in various chronic infections caused by these bacteria. At first the method was considered applicable only to chronic infections and for the most part to circumscribed lesions. Now, however, in the hands of its later enthusiastic advocates, it is applied to practically every form of bacterial infection, whether acute or chronic, local or disseminated.

It is possible, therefore, to trace the development of the theory of vaccination through three stages: (1) The principle of prophylaxis, that is, the production of immunity through the development of a disease in a mild form (small-pox, anthrax, chicken-cholera, typhoid fever); (2) the rapid production of immunity after infection, but before the disease manifests itself by its peculiar symptoms (Pasteur's antirabic vaccination), and (3) curative vaccination, or vaccination after the disease is established and has produced its local anatomic lesions and the attendant physiologic disturbance which we call symptoms.

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* An amplification of a short communication prepared for the meeting of the Medical Society of the State of Pennsylvania, held at Philadelphia, Sept. 22-25, 1913, but not read.

Concerning the scientific basis of the first and second of these principles, no question arises; only the third is in doubt. Unfortunately for purposes of exact exposition, the clinical extension of vaccination has been so all-embracing, so many diseases have been attacked in a hit-or-miss way, that experimental investigation with its slow and time-consuming methods, so necessary for exact interpretation and conclusive opinion, have not kept pace with empiric practice, and indeed it is doubtful if experimental medicine can adequately study these problems. As Theobald Smith[1] has pointed out, most of the types of disease (typhoid fever, pneumonia, puerperal sepsis, general streptococcus infection, gonorrheal metastasis, and the like) are not exactly reproducible in the laboratory. Moreover, the natural occurrence of local lesions in animals is rare, and their experimental production is followed rapidly by spontaneous healing. These two important types of disease—the one with general dissemination of the causative agent through the blood and the other the purely localized lesion—which are treated at present by the clinical vaccinator are, therefore, difficult of study by the methods of experimental medicine. So also is it with the question of vaccination of typhoid carriers. A typhoid cholecystitis artificially induced in the rabbit in an attempt to reproduce the condition of the human carrier is hardly a real analogy, for the rabbit is not peculiarly susceptible to typhoid infection, and the apparent effect of vaccination would be more conclusive if the infection were induced with an organism to which the rabbit had a normal susceptibility.

The difficulty of reproducing certain bacterial diseases in animals, and the failure of these diseases to follow their course as seen in man, as well as their tendency toward spontaneous cure, minimizes the possibility of utilizing this phase of laboratory method as a means of establishing the efficacy of vaccine therapy in diseases of prolonged course. In acute septicemic disease due to virulent organisms, with early death or rapid recovery as the two possibilities, the experimental method offers some promise, but such diseases are not those amenable to vaccine treatment.

It is through studies based on the latter type of experimental disease that our present extensive, but not at all conclusive, knowledge of infection and immunity is based. It is only in an indirect way, however, that this knowledge can be applied to vaccine therapy. It may be argued that as the line between health and disease is defined clinically with difficulty, so the principles underlying prophylactic immunity may be merged one into the other (Smith). Thus we may harbor disease germs, as the pneumococcus, with perhaps slight infection or slight intoxication, without being aware of it clinically. So also while we speak of antirabic vaccination after infection as prophylactic, it is difficult to say on account of lack of knowledge of the pathology of this disease where the prophylaxis ends and the curative effect begins.

The enthusiastic supporters of curative vaccination stretch this possible application to cover all forms of vaccine treatment and assert that the introduction of large numbers of extraneous bacteria stimulate the natural immunizing process to greater activity, thus artificially fostering the slow process of naturally acquired immunity. For this extension of exact knowledge to cover more than certain localized or slowly developing infections there is no basis in fact. Such enthusiasts lose sight of the fact that there is no common mechanism of immunization. The process differs not only according to the type of infecting organism but also according to its virulence and the localization of its toxin in the host; also variations in the reaction of the infected host play an important part.

No more important principle has resulted from immunologic studies than that the process of immunity in each infection must be studied by itself. The principles of immunity to one infection or poison cannot be applied to another, even if both are due to organisms apparently elaborating their poisons in the same way. For example, compare the difference in action of the specific serums for two organisms—the diphtheria bacillus and the tetanus bacillus—each of which produces a soluble toxin. One is curative, the other at best prophylactic. If this difference occurs in the serum therapy of diseases produced by soluble toxins, and our knowledge of these is perhaps the most satisfactory, how unwise it is to apply a general rule to vaccine therapy, our scientific knowledge of which is so slight.

Is it logical to apply the same procedure to a definitely localized lesion such as the staphylococcus abscess and also to a bacteriemia such as that due to the streptococcus or pneumococcus? Immunology has taught us that many cooperating and interacting forces are concerned, as antitoxins, bacteriolysins, opsonins, agglutinins and phagocytosis. Not all cooperate equally; in one disease, antitoxin formation appears to be the essential mechanism, in another phagocytosis, in a third bacteriolysin, and so on. In no two diseases is the interaction the same, and the reaction may vary according to the individual characteristics of the infected individual. These factors were emphasized by Wright, but are seldom considered by the present-day clinical vaccinator, who applies the same method to all infections. They are, however, the factors on which the scientific basis of vaccine therapy, if it is to be attained, must rest. As many of the known diseases cannot be exactly reproduced in animals, and as reactions vary in different hosts (species), the scientific basis of vaccine therapy can be obtained only through the careful studies of clinical research controlled by the accurate methods of the experimental laboratory. As Smith[2] stated some years ago, "The practicing physician in cooperation with the clinical laboratory will have to work out his own salvation, and this can be done only with the aid of the most rigorous and painstaking methods which medical science can supply. Any other course is certain to lead astray."

The discussion of curative vaccination may be simplified by dividing infections into two groups, the localized and the disseminated. In the case of localized chronic infections, a plausible explanation is at hand and it is this which probably elucidates the frequent successful use of vaccines in this group and fully justifies their use.

A chronic localized infection is probably such because the infected individual has a degree of resistance sufficient to prevent the spreading of the infection. This localization may operate, through a walling off by new tissue and therefore imperfect exchange of fluids, to prevent the entrance in adequate amounts of immune bodies from the blood and lymph, or the bacteria may have become resistant to the mild attack of diluted immune bodies. Surgical intervention may overcome this by allowing, through incision, the escape of easily evacuated

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1. Smith, Theobald: An Attempt to Interpret Present-Day Uses of Vaccine, The Journal A. M. A., May 24, 1913, p. 1591.

2. Smith, Theobald: What is the Experimental Basis for Vaccine Therapy? Read at the Annual Meeting of the Massachusetts Medical Society, June 8, 1910.

contents and the destruction of the infecting agent by the immune elements in the large amounts of fresh blood or lymph which enter the area of infection. Also the dissemination of the bacteria locally may aid to increase antibody formation. Vaccine therapy substitutes for surgical intervention the injection of large numbers of dead bacteria in locations from which their immunity-stimulating substance or substances may be readily absorbed. These acting as a stimulus cause the formation of antibodies, which, entering the blood-stream, rapidly raise the content of immune substances in the body fluids, and these in turn coming in contact with the local lesion, and disturbing the equilibrium between the bacteria and the local reaction, may lead to the overwhelming of the infecting agent.

This theory is supported by our knowledge of leukocytosis—the hyperleukocytosis of an acute non-encapsulated lesion and the normal or hypoleukocytosis of a chronic localized lesion. In the latter circumstance substances stimulating leukocytosis do not escape, and the reacting mechanism in the bone-marrow is not stimulated. The condition is analogous to the failure of increased immunity under the same circumstance; indeed, it is difficult to deny that the mechanism of leukocytosis is not perhaps the most important mechanism of the immunizing process in disease characterized by local suppuration. As a practical rule one would expect the administration of vaccine to be of value in local suppuration with a normal or hypoleukocytosis and to be superfluous in that with hyperleukocytosis. This question has been studied in connection with Wright's opsonin index, but in later years, with the increasing doubt concerning the value of this index, the interesting problems of leukocytosis in connection with vaccine therapy have been largely neglected by the clinical vaccinator.

In the second group of infections, those characterized by general dissemination and invasion of the blood-stream, the situation is entirely different, and for curative vaccination no scientific basis, as the result of experimental investigation, can be offered. We know that toxemia and fever are the natural results of bacterial activity and, moreover, that the presence of the former in some degree is essential to the initiation of the immunizing process, and that under experimental conditions this process occurs more rapidly at temperature above the normal than it does at normal temperature. It is difficult therefore to understand how the immunizing process can be hastened, if severe toxemia and hyperpyrexia are already present, by increasing the intoxication by the artificial introduction of more toxin. The argument used to support the treatment of local infections cannot be used here, for in a general septicemia, with organisms in every tissue of the body, the addition of a few million organisms more or less cannot be a factor of great importance; moreover, with such wide dissemination of the infecting agent it would seem impossible, by injection, to bring into action new cell territories, not already involved, for the local production of immune bodies.

It is theoretically possible, on the other hand, in those cases of parasitism—the carriers—in which the toxicity of the persisting organism is of low degree and produces slight clinical symptoms (no fever and no toxemia to stimulate a higher grade of immunity) that the introduction of dead bacteria, capable of being immediately utilized, stimulates the higher level of immunity necessary for the termination of the parasitism. In such cases, vaccine therapy, in that the mechanism of increasing immunity is analogous to that in local infections, would appear to be of value; practically, the treatment of typhoid carriers by vaccination has been an absolute failure.

This summary indicates that we have at least a plausible theory on which to base the practice of vaccination in localized chronic infection; a possible extension of the same theory to carriers, but no experimental or other scientific basis for vaccination in diseases characterized by wide dissemination and general infection.

It is not a part of this discussion to take up seriatim the use of vaccines in the various infections. Certain practical phases of the present use of vaccines must, however, be considered.

AUTOGENOUS VACCINES VERSUS MIXED VACCINES

In all the early work curative vaccination was based on the principle of making a vaccine from the organism responsible for the lesion of the person to be treated. In this early work the bacteriologist was therefore an important agent, not only in the isolation of the organism, but likewise in the preparation of the vaccine. The field was as a result largely occupied by expert bacteriologists or those specially trained to the needed technic. It is probably for this reason that such excellent results were obtained, especially in the treatment of local infections, to which the procedure was at first limited. Later it was considered justifiable to prepare a vaccine for each of two associated organisms, but still the principle of "autogenous" vaccines held and the vaccines were always prepared from the lesion to be treated. Still later, with the commercialization of vaccines, not only was the principle of autogenous vaccine largely abandoned, but three, four or half a dozen organisms were included in one mixture, thus inaugurating a bacterial polypharmacy, if the term may be used, as absurd and unscientific as the "shotgun" prescribing of our older drug therapeutics. A mixed vaccine for common "cold" containing seven micro-organisms (staphylococcus, streptococcus, pneumococcus, *Micrococcus catarrhalis* group, bacillus of Friedländer group, diphtheroid, *Bacillus influenzae*) is of one of the most recent bacterial "shotgun" mixtures, which takes the chance of one lucky bull's-eye in seven shots. No one can claim a scientific or even a common-sense basis for the treatment of a cold by such a mixture. It relieves the physician of the necessity of an etiologic diagnosis, discourages the search for contributing factors, and subjects the patient to uncontrolled experimentation with the "newest thing out." When one remembers that most of these so-called "mixed vaccines" are not vaccines in the sense of the word as used by Pasteur and Wright, that is, the bodies of killed bacteria in suspension, but are the "sterile aqueous solutions of metabolic substances generated by bacteria grown in artificial mediums,"[3] the possibilities of subjecting the patient to multiple intoxications, not essential to his recovery, are apparent. To inject a carefully prepared autogenous vaccine, that is, the centrifugalized and washed bodies of dead bacteria similar to those causing the disease, in the hope of stimulating immunity in a mild and gradual way, is a defensible procedure; but to inject the soluble products of half a dozen or more pathogenic bacteria is a species of privileged poisoning under the protection of professional usage which few physicians would attempt with the better-known inorganic alkaloidal poisons of the pharmacopeia.

So unscientific and discreditable is the present tendency that all reputable physicians, especially those who sincerely believe in a rational vaccine therapy, should insist, first, on an etiologic diagnosis, secondly, on an autogenous vaccine, and, finally, on the most careful and painstaking study by both laboratory and clinical methods of all phenomena before and after vaccination. The use of more than one vaccine in a given case need not be frowned on; if a lesion contains more than one organism, a corresponding vaccine for the secondary invader may be prepared; but the principle of the autogenous vaccine should be maintained. Commercial mixtures should be avoided at all times, especially if they contain the products of more than one organism. Only by following these rules in the study of large groups of cases can vaccine therapy be placed on a respectable basis. Perhaps cumulative clinical evidence thus obtained may yield eventually *a scientific basis*.

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[3] See advertising department of almost any medical journal.

VACCINES IN DISEASES OF NON-BACTERIAL OR DOUBTFUL ORIGIN

One firm which is extensively engaged in the exploitation of the mixed vaccine advertises that "practically all acute and many chronic diseases are caused by the metabolic products of bacteria,"[4] and proceeds to prepare vaccines for diseases the etiology of which is unknown, or at least doubtful. Like the Athenians, who in the fear that they might neglect an unknown deity, provided for the worship of the "unknown god," these manufacturers have their "mixed infection" preparation "applicable to the multiplicity of infections which may be said to be of questionable etiology."[4] This point of view which, it is a satisfaction to state, originated with the manufacturers and not with the profession, coupled with the assurance that vaccines can do no harm, has led to many absurdities in vaccine therapy, and as certain groups of physicians show more and more of a tendency to allow the commercial vaccine-makers to control their diagnosis as well as their treatment, it would seem advisable for the more carefully trained and less susceptible groups of the profession to act reservedly and to advise caution. A recent writer on this subject[5] has given, as example of some of the weird claims or suggestions made (for the most part this is true in trade, not medical journals) supporting vaccination, the use of mixtures of bacteria in the treatment of vertigo, pruritus ani, hay-fever, rheumatism, sciatica, gall-stones, appendicitis and heart-block. The extent to which the manufacturers have impressed the profession was demonstrated at a recent meeting of the most dignified, exclusive and presumably scientific of our national medical organizations, when one of its members discussed the relation of the streptococcus to heart-block and certain mental disturbances and the question of vaccine treatment of such conditions.

Rheumatism, diseases of the bones and joints, and allied conditions have come in for a large share of attention by the commercial maker of vaccines. The "Rheumatism Phylacogen," through a vast amount of advertising, is almost as well known as Ehrlich's salvarsan, but how different its origin and the method of testing its efficacy and of bringing it before the profession! The most ardent supporter of the view that certain forms of joint-trouble may be infectious or toxic in origin cannot accept the opinion of the manufacturer that the same treatment applies equally well to "acute rheumatic fever, acute articular rheumatism, acute inflammatory rheumatism, chronic rheumatism, rheumatic arthritis, rheumatic myalgia, rheumatic iritis, lumbago, sciatica."[4] Despite the inconsistencies of this classification of "rheumatic" (*sic*) affections, many physicians accept the advice, broaden the scope of their treatment and gladden the heart of the manufacturer by including many forms of chronic arthritis which he does not mention; but they are consistent to the extent that their additions include diseases of unknown or doubtful etiology. This they do in spite of the fact that the manufacturers definitely tell them that "failure of Rheumatism Phylacogen, properly administered, affords presumptive evidence of an error in diagnosis."[4] Not only is this Phylacogen, according to its supporters, a specific in treatment, but it is also a specific in diagnosis—the equal of quinin in malaria, of tuberculin in tuberculosis, a combined salvarsan and Wassermann reaction in one and the same package—and all this in a group of diseases of doubtful etiology!

To use conservative language, such treatment is purely empiric and wholly speculative. When the joint condition is associated with a focal infection in some distant part of the body and an organism can be isolated and an autogenous vaccine prepared, the use of the latter in addition to local treatment is a justifiable procedure, on the general theory of the vaccine treatment of local infections. When a local lesion cannot be determined and an etiologic diagnosis is therefore impossible, vaccine treatment, "mixed" or otherwise, is indefensible, both on the basis of rational therapeutics and of the ethics which control the physician's relation to his patient.

That many physicians claim excellent results for vaccines in the treatment of diseases of obscure origin is not conclusive. It is in just this class of diseases that the osteopath, the naturopath and others of the same group likewise claim most brilliant results for their peculiar methods. Who is to judge of the influence of a single factor in the treatment of disease? Has not past experience shown that early results with new cures are usually brilliant? How many diseases heal spontaneously or are improved despite any treatment? How important is the psychic influence of a new widely heralded treatment? And, on the other hand, are the unsuccessful results always reported; do we learn, except by accident, of the failure to improve and of sudden death due to the treatment? Many factors must be considered in arriving at an opinion.

The present attitude with regard to vaccination in diseases of doubtful origin promises little for either etiologic diagnosis or specific treatment, the two aims of modern medicine, nor does it aid that broader effort to advance social welfare, in the furtherance of which, medicine, if it is to remain a powerful factor, must be both safe and sane.

If the venturesome practitioner feels compelled to use vaccines in diseases of obscure origin, let him do so, supported by every aid which laboratory and clinical research may offer; but the wiser course, in the absence of a demonstrable local infection from which an autogenous vaccine may be made, is to leave vaccination to others. One fact, the essential mechanism of vaccination, must not be misinterpreted or minimized, and this is especially important in view of the advertised statement concerning commercial vaccines. The statement that "the growth of infecting micro-organisms can be arrested and their effects neutralized by the products derived from their development in artificial culture mediums"[4] is misleading in that it implies direct bactericidal and antitoxic action —which is not the case—and leaves out of the question the only rational explanation of vaccination, that it is the stimulation of the immunizing process in the host. This misleading statement of the commercial vaccine-maker is responsible for much of the misunderstanding concerning vaccine therapy and its curative value. As Theobald Smith phrases it, "Vaccines applied during disease will be rarely, if ever, life-saving, but they may hurry a stationary or languid process which tends to recovery, by hurrying into play the unused reserves of various tissues."

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[4] Advertising notice, Parke, Davis & Co.

[5] Stone, W. J.: The Use and Abuse of Bacterial Therapy. The Journal A. M. A., Feb. 15, 1913, p. 489.

SUMMARY

1. Prophylactic vaccination rests on a sound scientific basis of experimental study and clinical observation.
2. Curative vaccination has no sound experimental basis, but the application of the general principles of immunity as well as clinical observation offers a plausible basis for the treatment of localized, more or less chronic infections, and of "carriers." On the other hand, no satisfactory basis is at hand for curative vaccination in the acute self-limited diseases characterized by general dissemination and systemic infection. All attempted vaccinations in this group must be considered as purely experimental.
3. The only logical method of vaccination is the use of "autogenous" vaccine. Mixed vaccines, commercially prepared, constitute a type of bacterial polypharmacy which should be discouraged as unscientific and nonethical.
4. Therapeutic vaccination, if it is to be placed on a scientific basis, should be regarded as a method of treatment based on the study of the individual and his infection and not as a ready-made method capable of the universal application of stock vaccines. The use of vaccines in diseases of doubtful or unknown etiology is unscientific and ethically indefensible.
5. Every physician practicing vaccination should bring to bear in the study of his results every method of laboratory and clinical investigation which promises light, and preferably should work with a trained immunologist. Thus only can definite knowledge of the efficacy of vaccination be obtained. It is well to remember the words of A. E. Wright in this connection. Wright asserts that for such skilled service as that demanded by vaccine therapy "is required a man who has spent years of study to master the technic; to know how to make the vaccines, to know where to look for the microbes, to know which are the most important microbes, to know how to isolate them, and, most of all, a man with sufficient experience and ability to apply all these things."
6. In the interpretation of results it should be borne in mind that, as Theobald Smith has emphasized, vaccines rarely, if ever, cure, but act rather in aiding a process which tends to recovery by stimulating a languid process of immunization.

In the preparation of this paper I acknowledge the free use of two papers on the same general subject by Theobald Smith,[6] and one by F. P. Gay.[7]

University of Pennsylvania.

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[6] Smith, Theobald: What is the Experimental Basis for Vaccine Therapy? read before the Massachusetts Medical Society, June 8, 1910; An Attempt to Interpret Present-Day Uses of Vaccines, The Journal A. M. A., May 24, 1913, p. 1591.

[7] Gay, F. P.: Cal. State Jour. Med., July, 1911.

Mistakes Not Always the Result of Ignorance.—"Even Homer sometimes nods," and the most alert of us sometimes become blind to the significance of symptoms and signs with which we were perfectly familiar at an earlier period of our professional career. Mistakes may thus arise, not so much from a lack of knowledge, as from the fact that the possibility of such and such a condition has "never once crossed the mind."—F. W. Langridge, in *Clin. Jour.*

THE PROBLEM OF THE CRIMINAL IN THE LIGHT OF SOME MODERN CONCEPTIONS

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Since Lombroso enunciated his views as to the physiognomy of criminals which caused him to place them in a class by themselves, he has gained many adherents with views modified and extended. There has developed, naturally enough, an opposing army of thinkers who may be divided into those who place the blame for criminal offenses entirely on the social environment of the offender, including his training or lack of it from birth to maturity, and those who regard him as wilfully vicious even though morally defective, and therefore responsible for his actions.

It would seem that in the course of the controversy the latter view has steadily been losing ground, while the former has not as yet made good and has lost many from its camp because of disappointing results following half-hearted or impulsive attempts at prison reform without a clear understanding of the material dealt with.

More and more champions of the Lombrosian idea in its essence, namely, that the criminal is inherently abnormal, have come to the front with evidence more or less worthy, and criminology at the present time is fast becoming a medical science rather than a legal one.

Even before Lombroso's publication there appeared in 1870 an article by Bruce Thompson, resident surgeon in the prison at Perth, Scotland, which argued from the medical point of view in strong terms. To quote:

> On the borderland of lunacy lie the criminal populations It is a debatable region; and no more mixed problem comes before the medical psychologist than this, viz., where badness ends and madness begins. The inmates of asylums and of prisons are so nearly allied that thin partitions do their walls divide.

To quote again:

> From large experience among criminals I have come to the conclusion that the principal business of prison surgeons must always be with mental diseases; that the number of physical diseases is less than psychical, and that the treatment of crime is a branch of psychology.

He then lays down the following propositions:

> 1. There is a criminal class distinct from other civilized men.
> 2. The criminal class is marked by peculiar mental and physical characteristics.
> 3. The hereditary nature of crime is shown by the family history of criminals.
> 4. The transmission of other nervous disorders with crime in this class proves the alliance of hereditary crime with other diseases of the mind, such as epilepsy, dipsomania, insanity, etc.
> 5. The incurable nature of crime in the criminal class goes to prove its hereditary nature.

Whether these propositions are justified or not, they go to show the impression that a close study of the criminal made on a careful observer before the days of modern psychiatry and psychanalysis, before the realm of the subconscious mind had been explored by Charcot and Janet, Freud and Jung.

But this new school or phase of the subject is by no means on a footing sure enough to convince either the public at large or the legal profession of the justification for its point of view, nor has it received often enough that respectful hearing in the courts which would have prevented injustice being done not only to the prisoner at the bar, but also to society. Nevertheless, complete justice to both offender and society is slowly on the way, and even those who oppose or take no thought of the newer doctrines are unconsciously falling in line with them by their attempts to ameliorate the condition of the convict, by agitating for prison reform, indeterminate sentences, the parole system, and the changing of the prison into an institution for correction and custody rather than punishment. True enough, more of sentiment than of science is back of these methods, and therefore in many individual instances harmful injustice to society and ultimate harm to the offender against society is wrought. This is inevitable in any period of transition from an erroneous to a more correct method of dealing with social problems. As more harmony of opinion comes to exist among those who have been forced to take up the problem because of a contact gradually growing more intimate, justice to all will come nearer. And it is the psychiatrist, with his collaborator, the psychologist, on whom the responsibility must rest most heavily if the newer ideas of the nature of crime as a disease, of the criminal as a sick man, are to prevail.

There is no longer any credited opposition to the view that criminal offenses, petty or otherwise, are the products of individual and social disease. With the latter aspect of the subject I am not at present concerned. While the influence of environment, for those most charitably inclined, excuses the offender from responsibility for his condition, it does not excuse him from responsibility for his acts. But if every offender is a diseased person, in the psycho-physiologic sense, his responsibility must come into question before the bar of justice.

QUESTION OF RESPONSIBILITY

Many a medicolegal battle has been fought over this question. The issue has been confused usually because the legal mind has ever thought of consciousness as synonymous with sanity. Because a man knew what he was doing the lawyer has held him responsible. But a man's mental make-up is a very complex thing; it is a bundle of psychic forces and habits which may be summed up in three divisions: intellect (or consciousness); emotion, that is, impulse to act; and will, that is, action itself. No two persons are alike in the strength or weakness of one or the other of these forces. To take the view that consciousness of the wrongfulness or illegality of an act at the time of its committal makes the offender "responsible" for it and legally sane, is inconsistent with the well-founded knowledge of mental functions which we now possess. Conduct is not dependent chiefly on knowledge, but much more on impulse or emotion and a will capable or incapable of controlling and directing impulse in a way to harmonize with knowledge, that is, consciousness.

It is just because of this complexity of function that so many different kinds of crimes are committed and so many different types of criminals exist, and the more or less inadequate classification of criminals that has been attempted by various writers will show when analyzed that consciously or unconsciously the classifiers have characterized the objects of their study according to the mental function most involved in them.

For example, Ferri, a follower of Lombroso, classifies criminals as follows:

1. The criminal by instinct, who is the born criminal.
2. The passional criminal, who commits crime under the influence of passion.
3. The criminal from chance.
4. The criminal from habit.
5. The insane criminal.

In the first group would be placed those who by reason of some inherent defect involving the intellectual and emotional functions are incapable of developing the sense of love, self-sacrifice, pity, honor, altruism or remorse—persons whose standard of right and wrong can never be the same as that of the average member of society in the period in which he lives. These are cases of arrested development in the ethical sphere and represent reversions in this faculty to primitive types.

Illustrations of the brute instinct which we all possess are seen in the class of criminals whose acts are due to passion, becoming, on sufficient provocation, beyond control because of weakness of will in the nature of a deficiency of inhibition power in the nervous system. Now it is known from physiologic investigations that the power of inhibition is a function of certain nerve cells and fibers in the cortex of the cerebrum.

In the case of the criminal from chance we are confronted with a feeble-minded person who is easily made the subject of suggestion because of deficiency of judgment and who responds to the criminal suggestion because of deficiency of inhibition. Persons of this kind are the tools of the more intelligent in crime, are harmless in themselves, and in an environment in which they are safeguarded from temptation they lead normal lives. They are children all of their lives in so far as their faculty of judgment and power of will are concerned.

In the class of habitual criminals are to be found those who by reason of environment, especially early environment, lead criminal careers in response to the association of ideas which their environment has aroused or which has been aroused by psychic shocks during the age prior to that of mature judgment; these shocks have affected the subconscious mind in a way to make it seek relief in periodical reaction, usually of a resentful, retaliative nature. Such a career is for them the path of least resistance. The first crime has relieved the depth of the subconscious mind from tension, and thus aroused in it sufficient pleasure or desire to cause disassociation of emotion from intellect at the time when the opportunity to commit the crime again occurs. Persons of this kind form the class of recidivists or repeaters, and it is noteworthy that prison officials have reported that the subsequent offense of the recidivists is exactly like or similar to the preceding one. Their condition may be compared in a measure to that of the kleptomaniac, in whom, however, there is a much wider disassociation of consciousness and who is more definitely insane. They may also be compared or likened very closely to the hysterical patient as regards the essence of the disorder. Janet shows clearly the nature of the weakness of will and of obsessive ideas and their consequences in this type of mind, for example:

> This feebleness of will and of attention is, in fact, manifested by a second characteristic which seems the inverse of the preceding (suggestibility), and which, nevertheless, is its logical consequence. Just as hystericals are incapable of beginning an action, starting a belief, or a perception, so are they equally *incapable* of stopping any when once started. To stop an action is to change our general state. It is to adapt ourselves in *another manner* to a new circumstance. These patients, who understand no change, understand still less such an one, for it is necessary to create a clear and powerful thought in order to stop the automatic development of an old

thought that has become stronger and stronger through repetition. "When I have begun something," we heard a patient say, "I must go on with it; I cannot stop; I would break the windows, kill myself—I am pushed on by my ideas; driven in a way that I cannot resist—I fall into an idea as down a precipice, and the declivity makes it hard to get back again!"[1]

In the definitely insane group of criminals, that is, those having one of the clear-cut psychoses, there are all grades of mental disintegration involving, as in the borderland cases, one or more or all of the functions of mentality. Those most prone to commit statute offenses are the paranoiac, with his disruption of judgment; the epileptic, in whom consciousness is almost entirely split off and who at the time of the act is almost entirely a subconscious automatic personality; the kleptomaniac; the dipsomaniac; other drug habitués, especially the cocain fiend, who may commit violence in reaction to hallucinations. Responsibility for crime committed by persons of this kind can be at once dismissed.

But when there are offenders of the first four classes enumerated to consider, we are brought face to face with the "borderland cases" in psychiatry. These comprise that vast number of unfortunates who are psychopathic, but are rarely committed to hospitals for the insane and are so disposed of only in their episodal periods of excitement or quarrelsomeness. When they recover to their usual level they are again discharged into society no more fit than before to cope with its complexities. Among these are the ones who commit petty offenses for which they are sent to jail, workhouse or reformatories for short terms; after their release they soon are returned because of inability to get along in any environment in which they are not closely subjected to organized discipline. They behave very well in custody, and if kept so for prolonged periods would gradually develop habits of self-control, concentration of mind and industry, which would make them self-supporting in occupations fitted for their capacities. The vagrant, the brawler, the gangster, the prostitute, cadet and the ne'er-do-well all belong to this group. They have been called by several writers "constitutional inferiors,"[2, 3] and this is a correct term to apply to them, if the particular function of mentality in which they are inferior is designated.[4, 5] Otherwise the term is unsatisfactory, for in some of their capacities many of them are found to be exceptionally brilliant, or at least superior to the average, that is, in music, drawing, literature, invention. For these, one writer prefers the term "constitutional abnormality."[6] The sort of offenders just described may be found in any of the first four groups of Ferri's classification, as may those who commit more serious offenses, crimes which are punished by long sentence in the penitentiary or state prison.

All offenders, indeed, may be characterized by one or more of the following attributes:

1. Exaggerated suggestibility.
2. Exaggerated egotism.
3. Emotional instability.
4. A lack of altruistic or unselfish sense.
5. A lack of the power of sustained energy, that is, abnormal nervous fatigue.
6. A tendency to the easy disintegration of consciousness which permits the brutal or inferior qualities of the subconscious mind easily to become dominant when temptation occurs and to be ungoverned by the critical quality of the conscious mind; even when the critical function is sufficiently aroused, the power of direction by the will is in abeyance. Here is again seen the similarity in mental make-up of these persons to that of one afflicted with hysteria.

THE QUESTION OF SANITY

It is not my purpose to attempt to account for these abnormalities of conduct by theoretical consideration of the pathologic nature of them in so far as brain structure is concerned. Too little is known, too little can be known, of what constitutes complex brain function. But it can be confidently asserted that in every person of the types above considered we are dealing with a mentally abnormal person — therefore not a sane person, but a diseased person, a sick person, as well as an offender against the laws of the society in which that person lives —laws to which perfectly sane or well persons have no difficulty in conforming.

TREATMENT OF THE CRIMINAL

If the views just expressed are true to the best of our present knowledge, any method of dealing with the offender which contains an element of punishment is unjust to him and also illogical. It is likewise unjust and illogical from the point of view of the protection of society; for the idea of punishment necessitates fitting the punishment to the crime and not to the criminal. When the allotted punishment is completed, the criminal, unchanged, is set free. Society has the right to protection, the individual the right to justice; but the only real justice for the person who is in error is the attempt to correct the condition which caused him to err.

Does punishment do this? Have crimes decreased in the aggregate or in the individual case because of the customary penalties imposed for them? Statistics do not warrant any such assumption. In the United States from 1885 to 1906, murder and homicide increased from 32 per million inhabitants to 108 per million, while the number of executions in the same period increased from 17 to 76. The number of those in prison for all offenses decreased by 30 per each 100,000 inhabitants during this period. An increase is also shown in less serious offenses.[7] If these statistics mean anything, may they not go to show that the habitual or instinctive criminal is too often set free to repeat his errors and also to influence the unrecognized, potential criminal of the feeble-minded, constitutionally inferior class? It is the instinctive or habitual criminal who often is pardoned for good conduct, because of his ready adaptability to prison life when he knows such an attitude to be for his advantage. In these offenders, however, punishment only arouses a desire for retaliation on society.

What, then, is the remedy? Are we to abolish prisons and penalties and, taking the fatalistic view that all crime is incurable, shut up all offenders in asylums for the remainder of their lives?

Abolishment of punishment is certainly called for and is gradually coming as the prison is changed into a house for correction and custody, into a colony for abnormal people—where they may live as nearly normal a life as is possible for each and every one of them, where their individual characteristics and capacities are studied and their lives arranged accordingly. The same change has already occurred in the methods of dealing with the obviously insane, as may be seen by a visit to the most up-to-date state hospitals. If these methods are worth while in the case of the chronically insane, they are still more so in the treatment of criminal offenders who, though mentally abnormal, are, in the majority of instances, amenable to much greater improvement in habits of thinking, feeling and acting.

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[1] Janet, Pierre: Mental State of Hystericals, Rueff & Co., Paris, 1893.

[2] Kraepelin: Psychiatrie, Abel, Leipsic, 1887.

[3] Meyer, Adolph: An Attempt at the Analysis of the Neurotic Constitution, Am. Jour. Psychol., 1903, xiv.

[4] Wright, H. W.: A Consideration of Constitutional Inferiority, New York Med. Jour., Dec. 26, 1908, p. 7.

[5] Karpas, M. J.: Psychic Constitutional Inferiority, New York Med. Jour., March 21, 1913.

[6] Oberndorf, C. P.: Constitutional Inferiority and Its Psychosis, THE JOURNAL A. M. A., Jan. 27, 1912, p. 249.

[7] United States Census, 1910.

But such treatment cannot be accomplished without the supervision and cooperation of the medicopsychologic profession. It is perfectly possible for those who have associated for a long time in a professional capacity with psychopathic persons to determine who is amenable to this, that, or the other form of correction, and to tell when the person is sufficiently corrected in his neuropsychic functions to justify his parole into normal society.

It is also perfectly possible for such trained men to determine who should be kept in permanent custody. It is not possible for those of the legal profession to determine these questions justly unless they also have had the training of the physician and the psychiatrist. Nor is it possible for them to frame just laws as to penalties.

It is not unreasonable, therefore, to foresee the time when the function of the lawyer and the judge will be restricted to the determination of the guilt of the offender and the function of prescribing what is now called the "sentence" or "penalty," but which some day will be called the "therapy" or "treatment," will be taken over by physicians thoroughly trained in mental diseases, who are in the service of the state and consequently free from bias in judgment.

Prison reform must come from within, in response to the conception of crime which scientific study of it as a medicopsychologic problem engenders. Prisons will then become therapeutic schools and colonies controlled by men who know well the sort of material they are dealing with.

These methods and this attitude of mind already prevail in many of our large cities in respect to juvenile offenders. In many juvenile courts a thorough physical and mental examination, including family and developmental history, is made before the judge takes up the case, the offender being detained in a detention home long enough to accomplish the examination. The disposal of the case is likewise influenced almost entirely by the opinion of the medical examiner. If these methods are proper and practicable in dealing with juvenile cases, why are they not also proper for those of a larger growth who are yet children in respect to their development of the moral sense, the will, intellect, self-control, etc.?

Leaving aside the question of the present method of dealing with the major crimes, such as murder, arson, homicide, grand larceny, will any one question the need of reform along the lines suggested in the treatment of minor offenses? Can anything be more ludicrous as well as pitiable than to send the drunk and disorderly, the vagrant, the prostitute and the feeble-minded who have fallen into bad company to the jail or workhouse for a few months, there to find associations and influences worse than they have ever before been in contact with, and then to turn them loose to vent their pent-up feelings in a way which is only a natural response to the lower instincts which such treatment has stimulated!

Let us hope that the day is not far distant when all criminal offenders, "petty" or otherwise, will be looked on in the spirit of compassion, in the light of scientific insight, and the[illegible]ed symptoms of psychic disease.

Bellevue Hospital.

THE ETIOLOGY AND VACCINE TREATMENT OF HODGKIN'S DISEASE

PRELIMINARY NOTE *

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AND

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CHICAGO

This note is published at this time as a confirmation of the findings in Hodgkin's disease of Bunting and Yates,[1] and Negri and Mieremet,[2] and to call attention to the apparently marked benefit following injections of the heat-killed organisms found in the lymph-nodes.

A Gram-staining, non-acid-fast, polymorphous diphtheroid bacillus corresponding to the one found by Fränkel and Much[3] in smears, and cultivated successfully by Bunting and Yates and Negri and Mieremet has now been isolated from the lymph-nodes in twelve cases of Hodgkin's disease. It was obtained in pure culture in only three cases, while in the rest it appeared in conjunction with a staphylococcus. Whenever possible, a portion or all of two lymph-nodes were removed, one from the group involved the longest (usually the cervical region), and one from the group most recently involved (usually the inguinal region). In addition to planting small pieces of the lymph-node, emulsions in salt solution were prepared by grinding in a sterile motor in sterilized air, and planting the emulsion on blood-agar, blood-serum slants (aerobically and anaerobically) and into ascites-dextrose agar. The latter method has the advantage of yielding earlier and more uniformly positive results. By this method the minimum number of viable organisms and a relative proportion of those present has also been determined. In this way it has been found that the lymph-nodes involved the longest in a given case or those from cases of long standing showed more organisms and a relatively larger proportion of staphylococci, while the more recently involved lymph-nodes or those from the cases of shorter duration showed fewer organisms, but a relatively larger proportion of bacilli.

The marked pleomorphic character of this organism as pointed out by Bunting and Yates has also been noted by us. It has happened repeatedly that single colonies in the dextrose-agar, which showed bacilli only in smears, yielded in subcultures a pure culture of staphylococci aerobically, and forms of the bacillus either pure or in mixture anaerobically on the same medium. These facts suggest strongly that the associated staphylococcus is derived from the bacillus.

The vaccines are prepared by growing the organism isolated on the surface of Loeffler's blood-serum, ascites-dextrose-agar or blood-agar slants for from twenty-four to forty-eight hours. A suspension in salt solution is made, the clumps broken up as much as possible, and thrown down by fractional centrifugation. This clump-free emulsion is now standardized and heated to 60 C. (140 F.) for thirty minutes or one hour. Aerobic and anaerobic cultures are made on Loeffler's blood-serum, and these are incubated at least three days before the vaccines are used, to insure the sterility. Then phenol

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[1] Bunting, C. H., and Yates, J. L.: Cultural Results in Hodgkin's Disease, Arch. Int. Med., August, 1913, p. 236; An Etiologic Study of Hodgkin's Disease, Journal A. M. A., Nov. 15, 1913, p. 1803.

[2] Negri and Mieremet: Centralbl. f. Bakteriol., orig., 1913, lxviii, 292.

[3] Fränkel and Much: *Ztschr. f. Hyg.*, 1910, lxvii, 159.

(carbolic acid), 0.5 per cent., is added, and the treated killed suspensions are placed in the ice-chest for use. Whenever staphylococci were found, an attempt was made to have the vaccine contain the bacilli and cocci in about the proportion found in the lymph-nodes. It is obvious, therefore, that an autogenous vaccine is to be preferred, although good results have been obtained with a vaccine prepared from a series of strains isolated from different cases.

All of the patients presented lymphocytomas, all showed involvement of the cervical lymph-nodes, the majority had enlargement of the axillary lymph-nodes; the inguinal lymph-nodes were moderately enlarged in all of the patients; in four the mediastinal lymph-nodes were so large as to cause respiratory and cardiac embarrassment, with anasarca in two and pleural effusion in two patients. The spleen was palpably enlarged in ten and very large in five of these.

Histologic examination was made of the lymph-nodes of all the patients. The majority may be classed as the endothelioid type (Reed, Longcope, McCallum and others). One was classed histologically as lymphosarcoma and the remainder as simple lymphoma or lymphadenoma. The one patient with the histologic diagnosis of lymphosarcoma did not present clinical evidence of malignancy by general debility, anemia or recognizable metastases. As stated, the diphtheroid bacillus of Bunting and Yates was isolated from the lymph-nodes of all these patients irrespective of the varying histology of the lymph-nodes.

The blood-picture varied with the physical condition, length of illness and the absence or presence of fever. When present, the anemia was of the secondary type. Moderate leukopenia with relative increase of the small mononuclear cells was noted in some of the afebrile patients. Leukocytosis with the usual leukocytic formula occurred in most of the febrile patients. Four patients were febrile at periods. The temperature curve was of the remittent type. Seven patients were treated for long or short periods at the Presbyterian Hospital, Chicago, and were kept at rest. Five were under the care of physicians at home. Roentgenotherapy three times per week was applied to six patients at the hospital and was used with three of the patients under the management of others. Autogenous vaccine was used in all but one patient, who received the vaccine prepared from other patients. The vaccine was first given in the dose of from 5 to 10 millions and gradually increased to a maximum of 100 millions. The vaccine was given subcutaneously and repeated every five to seven days. We have not used it intravenously, but have considered that method of application in obstinate and extreme conditions. In febrile patients the second or third dose has been associated with a reaction consisting of an increase of temperature (in one patient to 107 F.), rapid pulse and general weakness and discomfort. In non-febrile patients only slight general reaction may occur with a rise of 1 or 2 degrees of temperature, slight general muscular aching and debility. But slight local reaction at point of injection occurs.

In six of our hospital patients there was a uniform and relatively rapid decrease in the size of the lymph-nodes—one of these without Roentgen treatment. One patient treated out of the hospital without roentgenotherapy, with very large lymph-nodes, big spleen and febrile, had a violent general reaction with the third vaccination, then became afebrile and the swellings of the lymph-nodes and splenomegaly rapidly diminished. After five vaccinations, this patient passed from our control and observation. Reports from physicians on two of the series show favorable progress with gradual diminution of the tumors of the lymph-nodes and improvement in a general way. One of these patients receives Roentgen treatment also; the other vaccines only. Two of the patients are dead. One with rather rapid enlargement of the mediastinal lymph-nodes died soon after the third vaccination, from the result of mediastinal pressure. This patient was managed at his own home by the family physician and the final clinical details are unknown to us. One patient with enlarged mediastinal lymph-nodes suffered for a year with respiratory and cardiac embarrassment. Right pleural effusion required frequent tapping. Under other care he received roentgenotherapy. A short period before death we isolated the micro-organism from lymph-nodes of the neck and groin and from lymphoid tissue removed from the nasopharynx. The patient died from the result of mediastinal pressure after only one autogenous vaccination.

Of patients under our continued observation one is apparently well. There are no palpably enlarged lymph-nodes; the much enlarged spleen is no longer palpable; the blood-picture is normal; his weight and strength are normal. One patient who suffered from much enlarged mediastinal lymph-nodes and consequent dyspnea, anasarca and great debility was very much improved with diminution of the size of all involved lymph-nodes, gained in weight and was subjectively comfortable, and has had the vaccines and Roentgen treatment every week since June. In October a remittent type of fever developed with gradually increasing anemia of the secondary type, a leukocytosis of about 18,000, with 80 per cent. of polynuclear cells. There was no increase in size of lymph-nodes. On November 24 she returned to the hospital. With rest in bed with vaccines, roentgenotherapy and good food there is again rapid general improvement. The other patients are improving with varying degrees of rapidity.

This preliminary note is presented with the hope that the clinical study may be carried on by others. We hope to present a more detailed report of these and other patients with protocols, definite histology of the lymph-nodes, blood-pictures, immunologic studies of the blood, etc. Finally, we have used Roentgen treatment coincidently with the vaccines, because we believe we were not justified in depriving the patients of any and all sources of help, even if by so doing we deviated from the narrow and definite path of scientific research. If it be finally proved that this micro-organism isolated from the lymph-nodes is the cause of the clinical entity called Hodgkin's disease, the use of the specific vaccines without roentgenotherapy may then be justified.

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Hydrochloric Acid and the Administration of Acids or Alkalies.—T. Gillman Moorhead (*Dublin Jour. Med. Sc.*, Oct. 1, 1913) says that the presence of HCl in diminished or increased quantity is no definite guide to the administration of acids or alkalies, respectively, and that in treatment the stomach cannot always be expected to respond in a manner similar to the reactions in the test-tube. In some cases treatment along definite chemical lines is useful, as in hypochlorhydria, in which tonics and acids are beneficial, but in these cases also alkalies administered some time after a meal are more symptomatically useful by neutralizing the organic acids present on account of abnormal fermentation. In hyperacidity due to HCl, the removal of the cause, such as excessive smoking, excessive drinking, or excessive nerve strain, is much more useful than alkaline treatment.

ETIOLOGY OF ARTIFICIAL FEEDING

A PLEA FOR THE STUDY OF BREAST-MILK PROBLEMS *

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The title of my paper expresses the desire that prompts its presentation—a wish to discuss, from actual clinical experience and from general observation, the reasons that lead up to a discontinuance of breast-feeding and which, therefore, bring about the institution of artificial feeding, and to prove that these reasons are usually fallacious. I shall not deal in statistics or cite classified groups of cases, but simply present the impressions which I have gained while following a clinical experience culled from private practice and from a comparatively large hospital clientele. The type of patients considered embraces a mixture of all classes, from the poverty-stricken alien who has but recently come to our shores to the infant of the rich surrounded with every luxury that the best city or suburban home can afford. The question is asked of every mother who presents an artificially reared babe or one on whom artificial rearing is being attempted, "Why did you take your baby from the breast?" In each instance—it matters not what the social status may be—the answer may be classified under one of three roughly made headings: (1) psychic, (2) educational, (3) economic or social. The divisions are not always distinctly separated, as a given reason may be embraced by one or more headings.

PSYCHIC REASONS FOR DISCONTINUING BREAST-FEEDING

The psychic reasons may as a rule be referred to the maternal mental state at the time. How is this produced? The breast-feeding is usually discontinued through an innate fear either of not being able successfully to accomplish the act of nursing through not knowing how to go about it or through a fear that the product of the mammary gland is sufficient neither in quantity nor in quality to supply the nutritional demands of the infant. Either state is induced by a failure of the mother to recognize the possibilities of her own organism or through an instinct of unfounded anxiety for the welfare of her offspring. The reverse—a rare manifestation of innate selfishness—may be operative. In either of the two former instances the psychosis, if it may be so called, usually has no foundation in fact, or the temporary cessation of the lacteal flow is directly inhibited by the fear on which it depends. This inhibition of secretion finds its analogue in an identical effect on other secretions, notably that of the saliva, when the same etiologic factor, fear, is in evidence. Unfortunately, as will be pointed out later, the profession, by a tacit acquiescence in the probability of the actual disability or, in many instances, by actual encouragement in the idea, is often to blame, if not for the beginning of the trouble, at least for its continuance.

Here the physician loses a golden opportunity of becoming a legitimate psychotherapeutist and, by the same exhibition of indifference or of actual carelessness in other psychasthenic states, permits the irresponsible exponents of questionable systems of mental therapy to succeed where he fails. It is my experience that this element of fear of not being able to accomplish the nursing function successfully is one of the most important factors in the discontinuance of breast-feeding, and I wish here to subscribe to the opinion that rarely, if ever, other things being equal, in an otherwise healthy woman, can a permanent organic, irremovable obstacle to successful maternal nursing be demonstrated.

"I did not nurse my baby because I could not." "My milk poisoned my last baby and it died." Parenthetically, it may be stated that it was not the mother's milk that poisoned the baby, but in all probability the indifferent artificial feeding on which it was placed when the breast was unnecessarily withdrawn. "I never can nurse my babies because my milk dries up." These and similar replies are given to our queries as to why the breast-feeding was discontinued, and not one of them will stand the test of careful scrutiny or of future experience in a birth that is intelligently managed. Repeatedly in physicians' families have I seen instances in which I have been summoned, two or three months after unsuccessful artificial nourishment had been attempted to rear an infant because this element of fear had caused the breast-feeding to be discontinued; while in subsequent deliveries in which the care of the breasts had been placed in my hands and the mother had been properly fed and encouraged and morally supported and all external interfering sources had been excluded, a period of successful nursing has ensued which lasted nine or twelve months and could have continued longer had I so wished. Who among you has not had a similar experience?

The fear that the breast-milk is not the proper food for the infant often depends on the development of the signs of early indigestion—vomiting and green-curded stools, and a failure to gain immediately in weight. This will be referred to again, as it involves the physician's responsibility. Suffice it to say that green stools and vomiting do not constitute a bar to successful nursing, although I have found them to be among the most common causes that put to flight the physician in his half-hearted attempts to conserve the breast to the infant.

Among the better element a pretense of willingness to nurse is often made while at the same time every possible excuse is seized on by the mother in an effort to demonstrate her inability. The exigencies of social life, an inordinate love of pleasure, the confession of utter ignorance and helplessness, a desire to escape the obligations of maternity and to shift them on others, a cowardly exhibition of hysteria or assumed physical weakness underlie the plea for assistance. I know no class of patients more difficult to handle; I know no more disheartening task than to convince such mothers of their error. They must be handled diplomatically, yet withal sternly, the conscientious physician refusing to be ruled by them or to acknowledge the incorrectness of his position. One must appeal to their moral sense, the duty which they owe to their offspring, and point out to them the uncertainties and dangers of artificial feeding. The climax usually comes by the mother seeking advice from one of a more conciliatory mold. Few will yield when once they have determined to seek the services of the bottle until perhaps it is too late—in the presence of a fatal diarrhea, convulsions or pneumonia.

EDUCATIONAL REASONS

The reasons given that may be classified as coming under educational deficiency call into account both the physician's and the mother's responsibility. Infant-feeding, in spite of the so-called advances made in the science, is neither properly taught in medical schools,

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

nor is it properly presented in most of the text-books, or practiced, as taught, by the leading dietitians in their hospitals or in private practice. I do not imply that the text-books fail to present the subject of artificial feeding thoroughly. On the contrary, the authors' attempts at comprehensiveness befog the issue. Too many views, too many theories and too many methods are still being taught. Students and practitioners when through perusing this or that authoritative work, or all of them, are left without the ability to apply practically what they have read. I was amazed recently when visiting the wards of one of the largest institutions of a certain city to find that the feeding cases were left by a distinguished chief in the hands of an inexperienced intern, who in his turn depended on a nurse of less experience. Stock mixtures, carelessly compounded, were fed. All the babies were doing badly. Answers to pertinent questions were evasive. Knowledge of metabolism, digestion and of the adaptability of the mixtures to the individuals was lacking. The wonder is, not that the average physician still refuses to be impressed with the value of scientific feeding, but that he ever attempts to follow out any case to its logical conclusion.

If this be true of artificial feeding, what may be said of the teaching and practice of breast-feeding? It is almost nil. The student and practitioner receive but little information as to how to interpret or to meet the signs of early indigestion, as to what are the best means of conserving the milk-supply and how to meet the problems of nutrition as they occur in the breast-fed. Authoritative opinion satisfies itself by stating that the best way to rear an infant is on the breast and, after demonstrating that the great yearly infant mortality depends largely on conditions attributable to artificial feeding, proceeds, without further comment on breast-feeding, to elaborate page after page of instruction on that means of feeding on which the greatest mortality depends. The paradox is real, since the conservation of human milk may be successfully practiced.

A breast-fed infant has colic: it is constipated or has diarrhea; it vomits; its stools are green and contain mucus and curds. None of these constitutes a bar to successful breast-feeding. With reference to vomiting itself I wish to state that, though it need rarely be so, it is one of the most common causes for withdrawing the breast. In all I have treated eight cases of pyloric obstruction, and in each instance maternal nursing had been discontinued because of the symptom—vomiting—the diagnosis of obstruction not having been considered. A little care and use of the ordinary methods of physical diagnosis would have determined that the cause of the vomiting depended not on the mother's milk, but on an organic stomach affection.

On the other hand, vomiting dependent on faulty milk, as an excess of fat, or on overfeeding or too frequent feedings, does not constitute a valid contra-indication to the use of the breast. Dietetic, eliminative and mechanical treatment of the mother and the institution of common-sense hygienic measures will speedily correct the error.

An infant cries a great deal; it does not seem to get enough milk; it is said to be hungry after nursing; it does not gain in weight rapidly enough; the milk is too thin or too rich, scanty, or entirely absent. Only once in a healthy woman, in a case seen with Dr. Victor A. Loeb, have I met a real instance of an entire absence of milk.

"The mother is too nervous or too irritable." "She is too weak." "All her strength goes into the milk." These and many similar statements are made by the mother, or her friends, or the physician, or all, as an excuse to abandon the breast entirely or to institute partial artificial feeding. Just as vomiting and indigestion rarely constitute a valid reason, so too it may be demonstrated, though time and space forbid detailed consideration of each supposed contra-indication, that none of the many reasons stated are really legitimate bars to maternal feeding.

Abscess of the breast need not, in my experience, in every case indicate complete withdrawal of the breast. The size, location, duration and whether or not pus is secreted at the nipple are the determining factors. If, then, it can be proved that the statement with reference to these supposed contra-indications be true, where does the responsibility lie? What may be done to offset the pernicious tendency to credit these really trivial reasons with such great etiologic influence? Physicians must be educated first to recognize the possibilities of the breast, and they in turn must educate the mothers. The specialist must set the example for the practitioner. Instead of espousing this one's or that one's method of artificial feeding, let him see to it that he is known as an actual and practical advocate of breast-feeding. Let him refuse to place an infant on the bottle just because it is brought to him for this purpose, unless he is presented with a sound reason and one not founded on fear or fancy. Let him, by actual weighing experiments before and after each feeding, satisfy himself as to whether or not the infant is receiving sufficient food. He should consider the weight of the infant at birth, its present weight and its average gain before he determines the nourishment to be unfit. If it be found so, let him make an honest endeavor to rehabilitate the lacteal flow before confessing failure. The need for systematic propaganda is urgent, and to be given authoritative weight it should emanate from the Section on the Diseases of Children of the American Medical Association. We should cease arguing about percentages and calories, the etiologic importance of protein, fat and sugar, the rôle that bacteria play, nitrogen intake and ammonium output, the effect of calcium and potassium salts, the two-hour interval, or the four-hour interval, spasmophilia and the exudative diathesis. Let us cease teaching something to-day and decrying it to-morrow, but let us unitedly declare to the profession and to the motherhood of America that the only correct way to feed infants is on the breast, and then let us teach them how to do it.

The artificial feeding of infants has engaged some of the brightest minds of the profession. From the first attempts of Meigs and Pepper in America to adapt cow's milk to the digestive apparatus of the human infant down to the present day illustrious students, Jacobi, Rotch, Holt, Chapin, Finkelstein, Meyer, Keller, Czerny, Heubner, Rubner and others, besides a host of diligent laboratory workers, the trend of investigation has been along lines leading toward the solution of this problem. In spite of years of effort it has been but partially solved. Some uniform rules of feeding may have been enunciated, but no one food, or one method or one system of feeding has been determined as universally adaptable to the human infant. Have the years spent in patient toil and profound study been for naught? This query may be answered negatively if the profession realizes that it has not solved artificial feeding, and positively if it is not conscious of its failure and at the same time that it has not utilized the advantages of breast-milk feeding. Could one-tenth of the time and study devoted to the investigation of artificial feeding have been diverted toward the consideration of the conservation of human milk and of the causes which lead to its disuse and of the means of treating and meeting the gastro-intestinal and nutritional disorders of the breast-fed, infant mortality would have speedily and materially dwindled. The efficiency of breast-milk as a prophylactic against acute infectious diseases, rickets and scurvy, and its therapeutic value in many instances in combating a fatal issue, is well recognized but too seldom utilized. In private practice the incidence of an acute infectious disease is almost invariably the signal to discontinue breast-feeding. The mother is actuated by fear. The physician displays a lack of knowledge in conducting the feedings during the interim. Here is a case in point:

Case 1.—An infant of 3 months with an acute empyema was admitted to the Philadelphia General Hospital. Bulging and redness appeared between the ribs. The empyema ruptured and the opening was enlarged and drainage instituted. After recovery, measles and, later, pneumonia of the opposite side developed, and still later the infant had convulsions. The treatment consisted alone of continuous breast-feeding and ordinary hygienic measures. No drug therapy was employed, and recovery was complete. To-day the baby is a fat, rosy specimen, with but the scar of the empyema remaining.

It would not have taken a great stretch of the imagination to prognosticate the fate of a poorly nourished, anemic, rachitic, indifferently artificially fed infant of this tender age under like circumstances. Breast-milk saved this baby's life and it will do likewise for others. We know well the effect of wet-nursing in many cases of decomposition(marasmus), which cannot be made to gain. The point is not that we do not possess the necessary knowledge—not that the case cited presents anything new—but that we fail, in our zeal to delve deeper into new methods of artificial feeding, to realize the treasure we possess in breast-milk, or, granted we do, we fail to put our knowledge to use. We are as

one whose hand,
Like the base Indian, threw a pearl away,
Richer than all his tribe.

The indifference with which physicians sacrifice the human breast is nothing short of shocking, especially since they possess nothing quite so good to offer. Even to-day the woful lack of knowledge possessed by many practitioners as to how to adjust cow's milk to the needs of the individual is appalling. The cynical manner in which they regard the whole subject of scientific artificial feeding is disheartening. They are the chief offenders. They usually have many poor persons who seek their advice. It is among this class that the ravages of mortality are the greatest. It is these physicians we should reach. They are in need of propaganda which will educate them in the methods of breast-milk conservation.

According to my observations, maternal illness need not constitute a valid permanent contra-indication to breast-feeding in the majority of cases in which it is practiced. This has special reference to slight indispositions, colds, mild infections and minor operations. The ease with which the breast-milk may be rehabilitated can be witnessed daily, after a cessation of many days and even weeks. A wet-nurse was discharged from a case. The infant exhibited an idiosyncrasy to cow's milk. Persistent efforts were made for three weeks with the bottle. Rashes and gastro-intestinal symptoms developed (allergy). The wet-nurse was recalled. Her milk was found to be scanty and poor. Under forced feeding, general hygiene and the stimulus given to the mammary gland by the infant's lips, the fluid was reestablished to overflowing and reached a percentage of fat above 7 per cent., and measures had to be taken to reduce both quantity and quality. Eclampsia, nephritis, grave anemia, malignant disease, tuberculosis, certain forms of cardiac disease, pregnancy, epilepsy, insanity and prolonged infections are the type of illnesses which contra-indicate nursing.

The obstetrician, too, must assume his share of the responsibility in this war of conservation. He must be a breast-feeder enthusiast and should be capable, without the advice of the pediatrist, of handling the problem for at least the two or three weeks of his attendance. Beside his indifference to features other than those directly connected with the accouchement (care of the breasts, inquiry as to the condition of the nipples and the character of the milk, etc.), the greatest error into which he falls is to allow his patient to get out of bed too soon. This is usually followed by bleeding, which is deleterious to the quantity and quality of the milk. One obstetrician of my acquaintance is accustomed to give his patients a dose of Epsom salt daily after the third day. The result is that nearly all of his patients have bottle babies. This case illustrates what may be accomplished:

Case 2.—*One of his patients, the wife of a physician, had received a dose of Epsom salt daily for two weeks. Her milk was practically gone. She was anemic and undernourished, as* was the infant at the age of 7 weeks. It was on the bottle in midsummer. The parents were much alarmed, as their first baby had died of intoxication (Finkelstein). Forced feeding, sensible hygiene and a tremendous amount of moral support rehabilitated the milk-flow and carried the infant through the summer and far into the winter with exceptionally satisfactory results.

ECONOMIC REASONS AGAINST BREAST-FEEDING

Reasons for stopping breast-feeding, at once pathetic and difficult to overcome, are those which may be classified as economic or sociologic. No one denies that the poor and ignorant are in need of instruction in hygiene and general physical care. It may be pertinently asked, however, whether or not such instruction brings about desired results. Those who come into daily contact with disease the result of poverty, and endeavor to inject personality into their work and aspire to be more than medical men and to make their hospitals and institutions educational forces, often realize how hopelessly useless is the task. We are reminded of a saying accredited to Henry Ward Beecher that the most potent factor in the reformation of a hungry man is a sandwich. So these mothers, who are poorly housed and poorly fed, who must labor either within the home or outside of it, are best benefited by that advice which comes as actual material assistance to relieve, in part at least, their physical responsibilities.

On whom does the onus rest? On society itself and its representatives—the legislature. Free milk-stations, floating hospitals, clean milk and many other endeavors, providing what appear as luxuries to the poor, but which, as ordinary necessities, are secured, as if by divine right, or at least without the influence of visible external agencies, by those better situated, represent a well-intentioned but misdirected expenditure of thousands annually by the state and charitable organizations. Under our present social system, however, the necessity seems to exist. What else, other than charity, have we to offer to the mother who answers our demand that she nurse her babe by affirming that she must go to work; that she has not enough food to provide the ordinary fare, without considering the extra quart of milk which she must consume; that she must place her babe in a home or in a day nursery. Recently in Pennsylvania an act has been passed pensioning indigent mothers instead of separating them from their children by placing the latter in public institutions. While accomplishing some good its effect cannot be far-reaching, since it is practically a form of charity, itself a result of perverted social conditions and by its nature necessarily limited in its scope.

Further, it may be pertinently queried whether or not the permanent necessity for charity exists, and who is to determine who shall receive charity and who is to dispense it. In other words, why do poverty and its companion, ignorance, exist? Is it not possible that the error lies at the foundation of our social system, which denies to the worker his rightful share of that which his brawn has built, and gives the lion's share to the brain which conceives or directs? As a consequence his opportunities for education and self-uplift are limited. Does not charity simply represent a return by the individual or by the state of that which originally should have been given to the beneficiary as a product of his labor? If this be so, does it not appear patent that the necessity for charity not only does not exist, but that it is not humane and that, as before stated, it is makeshift and a blight on the state which encourages it?

One may ask, in what manner does this influence infant mortality in general and the problem of breast-feeding in particular? Its effect is potent largely for the reasons enumerated and because it hinders the independence of the nursing mother. It is recognized that however desirable an economic revolution which would benefit this class may be, its fruition and practical realization are not only problematic, but also far remote. The innate selfishness of human nature, the self-love, the exaggerated ego from which we all suffer, will indefinitely postpone the millennium of equal opportunity to partake of the natural resources of the earth and of the common well of knowledge. One fact stands out clearly, and that is that the nursing mother is performing for the state a duty not only as real but far more important than the artisan who is legally employed to build its bridges or to construct its highways. Why deny compensation to the one and not to the other? Let that mother who is devoting from nine months to one year of her time to the rearing of a future citizen of the commonwealth be relieved of material responsibility and be paid in actual cash for her services. This need not be regarded as chimerical but could, I believe, be put into practical operation and would redound to the good of the nation and would be a far more sensible expenditure of the public funds and certainly more humane than doled-out charity. Before legislators could be prevailed on to lend their influence to such a proposition the motherhood of the country and the profession are in urgent need of illuminating propaganda which would emphasize the advantages and possibilities of breast-nursing, the dangers and often the lack of the necessity for artificial feeding and the tremendous influence of the latter in maintaining the high-water mark of infant mortality. The burden of such a campaign of education is on that portion of the medical profession which is presumed to speak with authority on the matter of childen's diseases. I have appended the case histories briefly of a few of my personal experiences. They could be almost innumerably multiplied. Some appear commonplace and trite, but they teach a powerful lesson of the importance of breast-milk conservation. Each case lost to the breast adds its mite in influencing the sum total of the tremendous infant morbidity and infant mortality.

CASE 3.—Mrs. J., mother of four children, and healthy, refused to nurse because she said that her milk poisoned her last baby, causing its death. The present infant was immediately placed on artificial nourishment and finally passed through its first year after experiencing two severe attacks of spasms and one attack of severe digestive disturbance. This could have been avoided by breast-feeding.

CASE 4.—Mrs. M. had two children, both artificially fed. Both developed summer complaint and marasmus during the course of feeding, but finally recovered. The husband was a physician. The mother was told without reason that her milk was all water. She became pregnant again. From the day of conception, she was encouraged with reference to her ability to nurse her babe. After delivery intensity of moral support increased and she was well fed. Result: abundant milk-supply for ten months, and a healthy infant.

CASE 5.—Baby S., first baby, father a physician. Weight at birth 6½ pounds. Vomited every feeding. Bowels green and curded; anus excoriated. Mother very nervous. Diagnosis of probable pyloric obstruction made and advisability of weaning was being considered. Mother reassured. Pyloric obstruction eliminated. Milk contained high fat percentage. Mother dieted and purged. Told to ignore digestive symptoms. Small dose of strontium bromid and a little water administered before feeding. Baby continued to gain in spite of digestive symptoms, which gradually subsided. Present weight at six weeks, 10 pounds. Usual course in this case would have been to wean, with probable disaster on account of the approach of summer.

CASE 6.—Baby G., first infant. Mother well. Father a physician. Infant cried a great deal. Mother therefore convinced that she did not have enough milk and infant was starving. Very difficult to control. Finally convinced by actual weighing experiments before and after feeding and the progressive gain in weight.

CASE 7.—Baby L., father a physician. Had lost one infant from summer-complaint on bottle. Mother during puerperium had received an ounce of Epsom salt a day and besides had inverted nipples and small breasts. Rose from childbed weak, anemic and with flabby breasts. Flow appeared about to be leaving. Regular nursing advised, forced feeding, with *oatmeal* and Southworth's soup.[1] Return of flow was gradual and the gain in weight tedious. I refused to wean on account of summer. Mother very nervous. Both parents, against their better judgment, frequently threatened to give artificial food. Flow finally established. Result: a fat, healthy babe.

CASE 8.—Mrs. W., mother of two children. Very stout. Breast well developed, but not so much glandular substance. Confined with present baby in hospital. Permitted to get up on ninth day and to leave hospital on tenth day. Result: severe uterine hemorrhage. Rest in bed and forced feeding only partially restored flow of milk. Finally had to wean in summer. Result: severe intestinal disturbances. Final recovery. Remarks: Fault lay with the accoucheur. All trouble could have been avoided.

Thus, in a general way an attempt has been made to state the influences at work which have been responsible for the decadence of the habit of breast-feeding, and it would seem from my experience that the following conclusions are justifiable:

CONCLUSIONS

1. Breast-feeding is the only sane and safe method of infant-feeding.

2. The breast is too frequently sacrificed without cause.

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[1] Southworth's soup consists of 2 tablespoonfuls of yellow corn-meal boiled one-half hour with 1 quart of water. Water of evaporation is made up by addition of hot water. Whole is salted and flavored to taste. About 1 quart a day is drunk.

3. Psychic influences are largely determinable so far as the mother is concerned.

4. Fear plays an important rôle in the etiology of artificial feeding.

5. The two most common examples of fear depend on the mother's belief in her inability to provide suitable nourishment and on the signs of early indigestion which are erroneously regarded as a contra-indication to the continuance of breast-feeding.

6. The profession of the country has not been sufficiently educated in the methods of dealing with nutritional and digestive disturbances of the breast-fed.

7. Medical curriculums are lacking in such instruction.

8. Too much time has been spent in studying the problems of artificial nourishment without very much progress or benefit.

9. Physicians resort too quickly to artificial feeding.

10. Economic and social reasons for discontinuing the breast are the most difficult to overcome and find their origin in the present social system.

11. Charity is but a makeshift to relieve the present state of error. It is unnecessary and not humane.

12. A mutation of economic and social conditions, while offering relief, is remote.

13. In the interim nursing mothers should receive actual cash compensation from the state.

14. A campaign of education directed toward legislators, mothers and physicians is urgently needed and should be undertaken by the Section on Diseases of Children of the American Medical Association and the pediatric sections of allied organizations.

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ABSTRACT OF DISCUSSION

Dr. John Zahorsky, St. Louis: Most writers on the subject seem to agree that there are few mothers who are unable to nurse their babies. As an actual fact, I have great difficulty in private practice in keeping many babies on the breast, and I do not think that we can be as optimistic as Dr. Lowenburg that we can do this. I am excluding now any mother who has not enough to eat. I mean mothers of the better class who can pay for the best food and the best care. Many of them cannot nurse their babies in spite of all the psychotherapy that I can give and all the feeding methods that I can devise. The usual symptoms are acute indigestion and the baby does not thrive. The mother nurses the baby according to the ordinary rule. Nevertheless the baby does not thrive; it has severe dyspeptic symptoms that are not improved by lengthening the interval between feedings. What shall we do with these babies? They are very numerous. I have not been successful with these cases, and do not know anyone who has. I am collecting records of a large number of these cases which I hope some time to present. These babies are usually fed by supplemental or complemental feedings, and the mother soon finds that the baby does better, likes the artificial food better than the breast, and then she gives it more in spite of the doctor's advice. Why the mother's milk does not agree with the child we do not know.

When a mother asks my advice about putting her baby on the bottle, I say to her, "If you were going to have an operation performed on your baby in which there was a mortality of from 10 to 15 per cent. would you not consult several physicians before having to undergo the operation?" I then suggest that she consult two or three physicians before putting the baby on the bottle, since this has an equal mortality with an operation. We generally succeed in keeping these mothers from weaning the babies, but that does not always mean that the babies are fed.

Dr. C. F. Wahrer, Fort Madison, Iowa: I do not believe that a certain class of Dr. Zahorsky's patients come under Dr. Lowenburg's classification. I want to make a plea for those mothers who want to nurse their babies and can do it, but for some reason have been ignorantly advised. Within the last six months I confined two sisters about three and a half months apart. They both had a "Sary Gamp" for a nurse. She told the first sister that she could not nurse her baby because the milk was too thin. A few days after my last attendance the husband came to me and said the wife's breasts were hard and large. I said, "Have you been removing the milk?" He said, "Yes," I said, "What did you do with the milk?" He said, "Threw it away." I said, "What do you feed the baby on?" He said, "The bottle." Now in such a case the doctor must make his moral influence felt. I told him that they must feed this baby on its mother's milk or do without my services. If patients want to follow the advice of "Sary Gamp," who maintains that she has raised thirteen children and for that reason should give advice (although she has lost seven of them), they can do without my services. I told this nurse that she must not interfere any more or I would show her the door.

The same thing occurred when the second sister was confined. They also had "Sary Gamp." I told the mother that if she did not nurse the baby I would not come to the house again. Both these mothers are nursing their babies and are happy.

Dr. H. D. Chapin, New York: There seems to be some difference of opinion. There are some women who do wish to nurse their babies, but are physically unable to do so, although they are willing to follow all the directions that are given them.

Dr. H. W. Francis, Bancroft, Neb.: I live in a small town. I seldom have trouble in getting the mothers to nurse their babies. Occasionally we have a mother whose milk does not seem to agree with the baby. In my experience, the continued use of sodium citrate given to the baby at nursing time is often beneficial. I have continued this as long as three months without any harmful effect and it proves of benefit to the baby. It stops the colicky spells.

Dr. L. R. DeBuys, New Orleans: There is one thing that Dr. Lowenburg may have forgotten to mention which I think should be emphasized, namely, the care of the breast and the care of the nipples before confinement. It is absolutely essential. I recently saw a mother who was extremely anxious to nurse her baby. The baby was 11 days old. It was torture for her to try to nurse him, her nipples were so fissured. In a few days under the proper management the nipples were healed and she resumed nursing her baby without any pain or inconvenience. It is essential to have good nipples in order to have mental rest and effectual encouragement.

We meet two classes of mothers, those who want to nurse their babies and cannot, and those who do not want to and can. In the case of the latter I think that we are perfectly right in taking the position that Dr. Wahrer has taken. In those cases in which the mother wants to nurse her baby and cannot, my practice has been, if she is supplying a little milk which is not causing any digestive disturbance, to weigh the baby before and after nursing to determine what the baby is getting and make complemental feedings to meet the requirements. I have frequently found that the mother can nurse the baby for six or seven months in this way.

In an instance in which the mother was giving 4 ounces in twenty-four hours, by this method, in the course of three months she was giving 20 ounces of milk; the baby, of course, was having complemental feedings. Incidentally, the mothers in these cases were in good circumstances.

There is a tendency to wean the baby if the stools are not perfect, that is, are not normal custard stools. We must remember, in this connection, that it takes some weeks, two or three, sometimes a month, for the baby to become adapted to the breast and the breast to the baby.

I have had a rather unique experience in connection with an abscess of the breast. The breast had to be operated on. I allowed the baby to continue to nurse the healthy breast; and during the period when the diseased breast was being treated surgically I used puppies to nurse it, and in this way kept the breast functionating. After the breast had entirely healed and there were no organisms in the milk, the baby was put back to that breast, which continued to functionate satisfactorily.

Dr. Collins H. Johnston, Grand Rapids, Mich.: I have not found many mothers who do not wish to nurse their babies. Many mothers have not been taught that the mortality of bottle-fed babies is eight or ten times that of breast-fed babies. In my lectures to nurses I always emphasize the fact that there are but two contra-indications on the mother's part to nursing a baby. One is advanced heart disease, the other pulmonary tuberculosis. There are, of course, other occasional conditions in which we may, if necessary, advise weaning, but these two classifications will cover the great majority of cases.

I think also that physicians are frequently too careless in permitting mothers to wean their babies. We do not always sufficiently realize the difference, not only in the first year of life, but in later years, between breast-fed and bottle-fed babies. We all know that the death-rate among bottle-fed babies in the first year of life is much greater than among breast-fed babies, but we do not all realize the great influence breast-feeding has on the growth and development of children in the first five or ten years of life.

I saw some interesting statistics pertaining to this at the International Hygiene Exhibition in Dresden two years ago. In twenty-four families with one hundred and nine children, all breast-fed, at the end of at least five years of married life, not one of the children had died, while every one of the thirty-three families in which babies were all bottle-fed had lost one or more children during the same period.

Especially interesting were the results in families in which some of the children were breast-fed and some bottle-fed. In seventy-nine families of this class investigated there was a group of twenty-nine families with eighty-five breast-fed and one hundred and nine bottle-fed babies. At the end of eleven years all of the breast-fed children were alive and 57 per cent. of the bottle-fed babies were dead. In another group of thirteen families with forty-eight breast-fed and twenty-three bottle-fed babies, at the end of ten years all of the breast-fed babies were alive and all of the bottle-fed babies were dead.

We must not lose sight of these results of breast-feeding in infancy. The two main periods in which mothers wean their babies before the natural time for doing so are in the first month and in the fourth or fifth. The causes of weaning in the first month are vomiting, diarrhea, etc.

I often tell mothers that I do not care how many stools the baby has in the first month of life, whether one or two or twenty a day, nor how much the baby cries, provided it gains in weight. It frequently takes several weeks for a baby's stomach to adjust itself to mother's milk and during this time more or less gastro-intestinal trouble is bound to result. If the mother concludes that this is due to some imperfection in her milk and weans her baby on this account, a great mistake is made. I believe that the occasions when a baby should be weaned on account of some fault in the mother's milk are rare. When, after a thorough trial, it is found that a baby will not thrive on breast-milk, the fault is usually with the baby and not with the mother.

Dr. Frank C. Neff, Kansas City, Mo.: I think that Dr. Lowenburg's criticism of the medical profession is well founded in many ways. It does not apply, however, to men who are practicing pediatrics.

A custom which I have followed, and which I understand from Dr. Smith is followed in Boston, is to secure the breast-milk whenever it can be obtained from healthy women. Often the mother is willing to nurse the baby, but she thinks that she has not enough milk and does not know what else to do but give it the bottle. In this case, it is my practice to give supplemental feedings: to find out how much the baby is getting by weighing it before and after nursing and then to get supplemental milk from relatives or friends or any healthy mother who has more milk than she needs. When this milk is not procurable in any other way I have resorted to advertising in the daily paper, offering to pay a healthy mother so much a week for so many ounces of milk, she to come to the house as often as necessary and have the milk drawn out to be kept on ice and used subsequent to each nursing—not to take the place of any nursing. The baby should be nursed at the breast as much as possible and then fed this breast-milk from the bottle. I should like to ask you to try this method. It is surprising what a small amount of breast-milk some babies thrive on. This will solve many problems in cases in which the milk is insufficient for complete feeding.

Dr. E. O. Benson, Chicago: In the great majority of cases, there is no difficulty in inducing the mother to nurse the baby. In fact, the great majority of mothers among the better classes are anxious to nurse their babies. They have heard that there is a large proportion of mothers who cannot nurse their babies, and they are afraid that they may be in that class.

Years ago, when percentage feeding was first introduced, it was thought that a panacea had been found, but experience has taught us that there is no substitute for mother's milk, and this knowledge has come to the reading laity. As Dr. Gengenbach mentions, the nursing possibilities of women are influenced by their mental emotions and by artificial surroundings. A large proportion of women among the poorer classes take it for granted that they should nurse their babies. They have nothing else to think of but the care of their houses, their husbands and babies. Some mothers have difficulty because they are underfed, others because they are overfed. We must avoid too rich food as well as too poor food. In certain rural communities in the old country, in which mothers eat sour milk, old bread and little butter, possibly meat once a week, and otherwise subsist on cereals and gruels, you will find a large proportion of healthy babies and a large proportion of mothers who are able to nurse their babies.

I do not believe that physicians are such great sinners as Dr. Lowenburg seems to intimate, but we must put this matter strongly to physicians in order that they may advise every mother to nurse her baby.

Some babies, even after the best efforts, must be put on artificial feeding. Dr. Lowenburg rather condemned the time spent in studying artificial feeding, but many babies come to us after they have been weaned without the advice of a physician. When we leave a case, after confinement for example, we tell the mother to come to us when the baby is in difficulty. She does not do it. She first takes the advice of the neighbors or the grandmother, and then, after the child's digestion has been damaged by experiment, she comes to the physician and he has to meet the problem of artificial feeding. The number of these cases is large and the physician is not responsible for them.

Dr. H. Lowenburg, Philadelphia: My experience does not permit me to agree with Dr. Zahorsky as to the inability of many mothers to nurse their babies, nor with the importance he places on the occurrence of dyspepsia in breast-fed babies. Possibly I meet just as many cases of indigestion and green stools in the breast-fed as he does, but I have come to regard them as of no importance and pay absolutely no attention to them. I meet green stools, curds and colicky babies, but, if the child continues to gain in weight—you will find that most of them do—I think that we should pay no attention to the character of the stools at all. I believe that from the cradle up infants require a little wholesome neglect. I think that they should not be fussed over too much. I think that we should pay less attention to the importance of dyspepsia in the breast-fed and think that all women with mammary glands can nurse. The patients that come under our observation who will not be able to nurse their babies will then become fewer in number. I do not say that women are not willing to nurse, but I do say that many of them are actuated by fear that they cannot, or that their milk does not agree with the child. It is important, as Dr. Zahorsky suggests, to make a systematic study of the stools of the breast-fed, to learn, if possible, just why it is that these infants do have green movements, because I believe that almost every one of them does.

It is important that the breasts should receive attention during the whole puerperium. Every other physical defect of the mother should be noted and corrected as well.

Dr. Wahrer mentioned, as an etiologic factor in the discontinuance of breast-feeding, the interference of relatives. This is often carried to extremes, especially by those who have had little if any experience, as when a maiden aunt who never gave birth to a child advises against nursing. Trained nurses are often responsible for unasked-for advice which leads to a discontinuance of the breast-food. I should not tolerate any interference from the nurse in a matter of this kind. Feeding and the care of the breast is in the hands of the physician, and the nurse should know it from the beginning. I criticize both the pediatrist and the general practitioner. So many of these cases occur among the poor and ignorant. Their physicians actually profess to know nothing about breast-feeding and still less about bottle-feeding, and yet the first thing they do when they meet colic and green stools is to put the baby on some patent food. I think that this criticism of the general practitioner is just. I think that the reason he is at fault, and this is where the pediatrist deserves censure, is that the pediatrist sets him a bad example by being a little too much in a hurry to put the child on the bottle. I will not put a baby on the bottle without a good sound reason.

Dr. Chapin's proposition is a fair one. I usually get at the women psychologically as best I can. I start out with the proposition that they can nurse and explain to them the advantages which will accrue to their infant, themselves and their husbands. Then I convince them of the importance of weighing the child before and after nursing to demonstrate to them that they have enough milk. Weekly weighings are insisted on, not oftener, to show them that their babies are gaining. Sometimes I will admit that I cheat a little bit in the beginning and tell the mother the infant has gained even if it has not. I think it is best to do this in order to encourage her. Soon the gain is inaugurated in nearly every case. Then I study the milk. If I find any ingredient at fault I increase or diminish it by regulating diet, fluids, laxatives and exercise. I always flood them with water in the beginning whether the milk is good or bad. This increases the total quantity and aids the infant's digestion. The quality can be controlled later. I wish again to emphasize the importance of the psychic element. There is only one type of woman that occasionally appears to be practically hopeless, and that is the very fat woman who has more fat than glandular substance.

A THEORY OF THE CAUSE OF ECTOPIC PREGNANCY

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Various speculations have seemed to explain the cause of ectopic pregnancy because, as we shall see later, they contain an element of truth so far as based on secondary causes present in only a few cases. Webster[1] was the first to formulate a working hypothesis comprehensive enough to embrace most of the observed phenomena and sufficiently fundamental to be a means to furthering our knowledge of the cause, when he definitely stated that the ovum always embeds in Müllerian tissue. At the time he formulated this hypothesis he had in mind that ectopic pregnancy always originates as tubal pregnancy; that is, the ovum embeds in the tube and not in the ovary (ovarian pregnancy) or in the peritoneum (abdominal pregnancy); but later, after undoubted cases of ovarian pregnancy were observed, he explained them as due to the extension of Müllerian tissue into the ovary. This hypothesis of Webster's leaves still unexplained the cases of abdominal pregnancy believed by some authorities to occur; it also is too speculative by attempting to explain embedding at an abnormal site as caused by reversion of the tissue-cells through degeneracy.

In stating that the ovum always embeds, in cases of extra-uterine pregnancy, in anomalous embedding areas; that is, in specialized tissues which, when normally situated, are in the endometrium, I formulated a theory that explains the cause of ectopic pregnancy wherever it might be located.[2] Before proving this theory by submitting further evidence I shall review briefly our knowledge of the early stages of human pregnancy and look into the causes of ectopic pregnancy as stated by others.

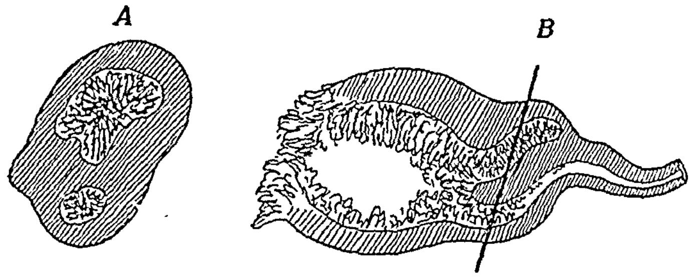

Fig. 1.—Outline sketch of sections from a tube which contained a six weeks' ovum; the *ovum* was situated proximal to the diverticulum; *A*, transverse section taken from plane indicated at *B*.

KNOWLEDGE OF THE EARLY STAGES OF HUMAN PREGNANCY

No one has observed a human fertilized ovum before it has become embedded, and hence nothing is definitely known in regard to the ovum from the time of its discharge from the ovary up to the time of its nidation in the endometrium. The earliest embedded ovum found in the uterus is the one described by Hubert Peters.[3] The external dimensions were 2.4 by 1.8 mm. and the internal dimensions 1.6 by 0.8 by 0.9. The embryo was 0.16 mm. in length. The uterus containing the embedded ovum was removed at necropsy within a few hours after death from a woman who had committed sui-

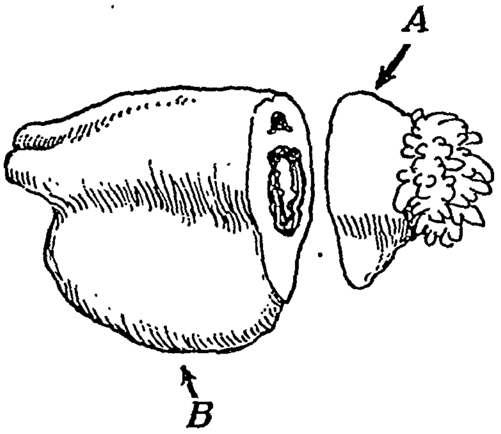

Fig. 2.—An outline sketch to show the *relative size* and situation of a large diverticulum which communicated with the main lumen near the fimbriated end. A small *ovum* was situated in the part represented at *A*. *The diverticulum* lies parallel to and below the *main* tube; it is much smaller at the isthmus where it again communicates with the main lumen; *B* indicates the *ovary*.

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[1] Webster, J. C.: *Ectopic* Pregnancy, New York, 1895; Study *of a Specimen* of Ovarian Pregnancy, Am. Jour. Obst., 1904, *pp.* 1, 28, 76; A Text-Book of Diseases of *Women*, Philadelphia, 1907.

[2] Huffman, Otto V.: Ectopic Pregnancy Associated with Anomalous Fallopian Tubes, Surg. Gynec. and *Obst.*, May, 1913.

[3] Peters, Hubert: Ueber die Einbettung des menschlichen Eies und das früheste bisher bekannte menschliche *Placentationsstadium*, Leipsic and Vienna, 1899.

cide. The history of the case showed that thirty days had elapsed since the beginning of the last menstrual period, and that two days had elapsed since the omitted period. The age of this ovum was about fourteen days. It was apparently larger than an ovum from another case, aborted sixteen and a half days after cohabitation, and described by Bryce, Teacher and Kerr.[4] These ova, which had become securely embedded and which had been fecundated for a number of days, were not so very much larger than mature, non-fertilized ova in the ovary, the greater diameter of which is given as 0.25 mm. by Waldeyer, and as from 0.22 to 0.32 mm. by von Ebner.

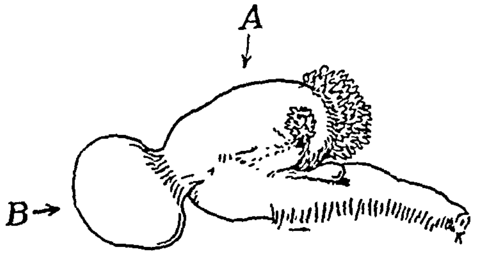

Fig. 3.—Tubal pregnancy in a malformed tube; *A*, situation of the ovum; an accessory ostium is present and below it there is a small cyst derived from the epoophoron; *B*, large cyst in the subserosa situated where the tube is curved back upon itself.

In the matter of computing the duration of gestations it should be kept in mind that we have no definite act or criterion which indicates the beginning of pregnancy. The act of insemination may be quite remote from that of fertilization because spermatozoa remain alive in the uterus and tubes for a number of days. Strassmann found human spermatozoa alive one week after coition and Bossi records a case in which they lived for more than twelve days. Dührssen[5] found living spermatozoa in a woman who stated that three and a half weeks had elapsed since having had coitus. Just when and where the spermatozoa fertilize the ova, that is, the most usual site for this meeting, no direct evidence yet shows. We know, however, that spermatozoa have been found in the fallopian tubes fifteen hours after the act of insemination, as in the case mentioned by Birch-Hirschfeld in which the woman had been fatally asphyxiated by gas during coitus. We also have the observations of Dührssen, wherein he found motile spermatozoa in a fallopian tube removed at a surgical operation. Then, too, we have the cases of ovarian pregnancy and tubal pregnancy, which indicate that the spermatozoa must find their way into the tubes.

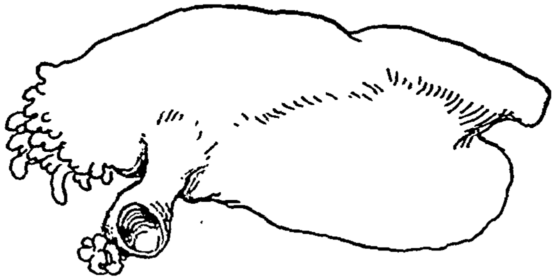

Fig. 4.—The tube from the opposite side of a case of tubal pregnancy. An accessory tube is attached to the broad ligament.

Granting, then, that the spermatozoa normally find their way into the tubes of women within a few hours after coitus, just as they do in the case of all other mammals, the next question to present itself is as to the manner in which the fecundated ovum is nourished prior to implanting itself in the endometrium; but here again we are without any absolute evidence. We do not know whether the tube is capable of furnishing nourishment by a secretion, nor do we know whether there is any secretion from the endometrium analogous to the uterine milk of some of the lower animals. On the other hand, we have evidence of the fertilized ovum influencing the maternal tissues as though by hormones, because the endometrium undergoes all the changes characteristic of pregnancy even though the fertilized ovum be retained in the tube.

If we should supplement the few observations which have been made in regard to human pregnancy with the great number which have been made on other mammals, we might safely conclude that fertilization usually occurs within the tube and that the fertilized ovum finds its way into the uterus within a day or two after becoming fertilized. We are discussing human pregnancy, however, and such analogies might only mislead us, because tubal or ovarian pregnancy, that is, primary ectopic pregnancy, does not occur in other mammals, although they are known to have extra-uterine pregnancy following rupture of the uterus. Bland Sutton,[6] who is the leading authority on this subject, has clearly shown that ectopic pregnancy in animals is caused by rupture of the uterus and is not due to implantation in the oviducts, except possibly in the one case in an ape observed by Waldeyer.

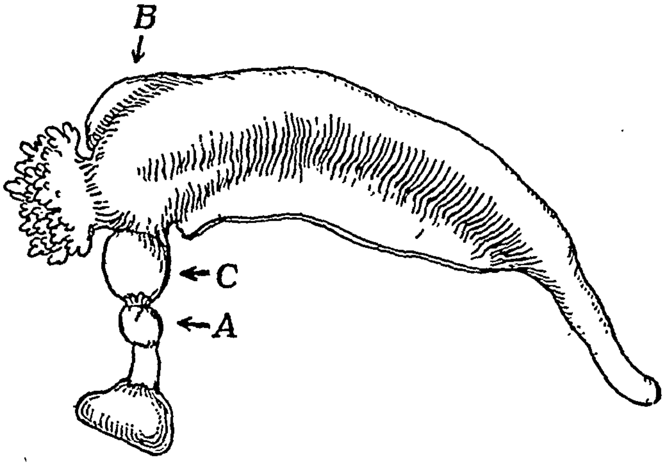

Fig. 5.—Tubal pregnancy in a malformed tube; *B*, the swelling caused by the ovum; *C*, a small cyst to which is attached an accessory tube. *A*, fringe of fimbriae which surrounds the constriction where the cyst and accessory tube are joined. Attached to the dependent end of the accessory tube there is a cyst of irregular shape.

THE ALLEGED CAUSES OF ECTOPIC PREGNANCY

Since the majority of ectopic gestations occur in the tube, most of the theories as to the cause of this most interesting pathologic condition have been based on interference with the mechanics of the passage of the ovum from the ovary to the uterus. This interference might arise from:

1. Obstruction to the passage of the ovum.
2. Defective propelling forces.
3. An abnormal ovum.

Obstruction

Those observers who have reported ectopic pregnancy as being caused by an obstruction have found malformations of the tube, myomas or inflammatory conditions. Offsetting these findings are the results of the experiments conducted by Tainturier, Mandle and Schmidt, who ligated the oviducts of rabbits after fertilization, with the object of obstructing the passage of the fertilized ovum, but who never succeeded in producing ectopic pregnancy. One of the most interesting conditions which may affect the passage of the ovum is that described by Landau and Rheinstein,[7] and J. W. Williams.[8] These authors a number of years ago called attention to diverticula of the tube as being a possible cause, in a purely mechanical way, of ectopic pregnancy.

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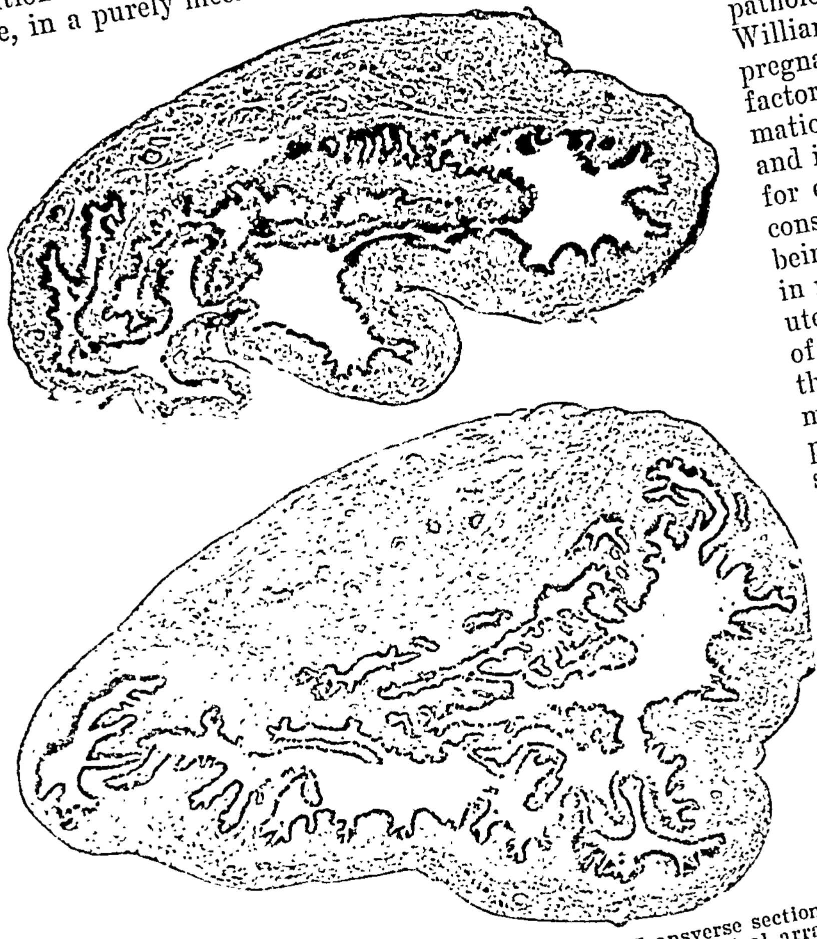
[4] Bryce, Teacher, and Kerr: Contributions to the Study of Early Development and Imbedding of the Human Ovum, Glasgow, 1908.

[5] Dührssen: Lebendige Spermatozoen in der Tube, Centralbl. f. Gynäk., 1893, p. 592.

[6] Sutton, J. B.: Surgical Diseases of the Ovaries and Fallopian Tubes Including Tubal Pregnancy, Philadelphia, 1891. The Purvis Oration on Abdominal Pregnancy in Women, Cats, Dogs and Rabbits, Lancet, London, 1904, ii, 1625.



Figs. 6 and 7.—Photomicrographs (×15). Transverse sections of accessory tubes which prove their character by the typical arrangement of the mucosa in folds.

Likewise, Schatz mentioned accessory ostia as making a vortex in the currents set up by the cilia, which served to hinder the progress of the ovum in its transit through the tube. He based his vortex theory on a case of ectopic pregnancy situated in an abnormal double tube with triple communications between the two tubes, which he believed to have caused a vortex that hindered the progress of the ovum. In this connection, I wish to call attention to the fact that Werth,[9] in discussing this theory of Schatz, suggested that a tube with accessory ostia might possibly be predisposed to ectopic pregnancy. Richards, who was the first to describe accessory ostia, suggested that the ovum might drop out of such ostia and result in ectopic pregnancy. Herzog[10] studied thirty specimens of ectopic pregnancy from which he concluded that anomalies were a factor, but only as causing an obstruction. He hinted at very vital conditions, however, when he directed attention to menstruating tubes as an anomaly. Henrotin and Herzog[11] described a case of pregnancy in a blind accessory ostium. Sänger[12] likewise reported such a case.

Defective Propelling Forces

Those who have reported that the propelling forces were defective believe that inflammation destroyed the epithelium. This theory was started many years ago by Lawson Tait. Subsequent observers and students such as Opitz, Micholitsch and Werth after finding inflammatory lesions in many cases of ectopic pregnancy have accepted that theory, while other students of the pathology of ectopic pregnancy, such as Kermauner and Williams, hesitate. Students of the pathology of ectopic pregnancy have never given inflammation, as a causative factor, the place that the clinicians have; for the inflammation does not necessarily interfere with ciliary motion, and inflammation in the endometrium, the normal tissue for embedding, is a most certain cause of sterility. In considering this theory of the lack of ciliary motion as being the cause of tubal pregnancy, it should be borne in mind that Lawson Tait proposed it at a time when the uterus was supposed by many to be free of cilia. In view of our present knowledge of ciliated epithelium both in the uterus and the tubes, I suggest that, if the cilia normally prevent embedding in the tubes, they should als prevent embedding in the uterus. J. W. Williams, i studying the possibility of lack of cilia being the cau of tubal pregnancy, was able to find cilia in all his specimens of tubal pregnancy, and Zedel, who also studied this question, saw the cilia in motion in several fresh specimens which he examined.

Assuming that the tube normally undergoes movements favoring the passage of the ovum into the uterus, conditions which might interfere with such movements would be hyperinvolution, either puerperal or as due to lactation; ovarian tumors, and psychic conditions affecting the tubes reflexly.

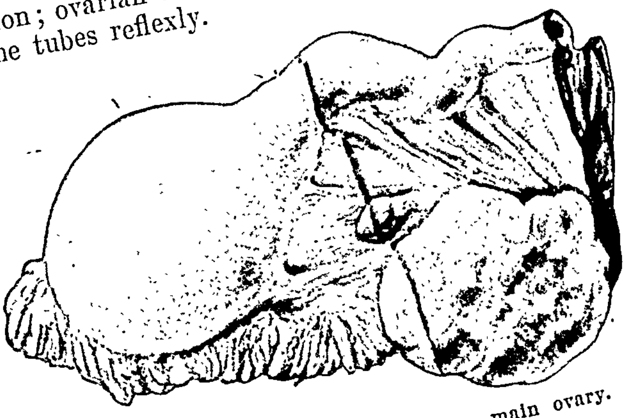


Fig. 8.—Tubal pregnancy, accessory ovary, main ovary.

Abnormal Ovum

Those who have believed the ovum to be abnormal have sought evidence in an inflammatory condition of the ovary which, according to their theory, would result in the discharge of ova without the power of motility that they assume the ova to possess. Of course, this is ure conjecture on their part.

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7. Landau and Rheinstein: Beiträge zur pathologischen Anatom der Tuben, Arch. f. Gynäk., 1890, xxxix, 27

8. Williams, J. W.: Contributions to th Histology of the Fallopian Tubes, Am. J 377; Obstetrics, New York, 1911.

9. Werth, R.: Die Extrauterineschwan der Geburtshülfe, Bd. ii, Teil ii, Wiesbaden

10. Herzog, M.: The Pathology of Obst., 1900, xlii, 145.

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enrotin and Herzog: Anomalies du canal de Müller comme grossesse ectopique, Rév. de chir. abdom., 1898; Very Early in Ectopic Pregnancy in a Diverticulum, New York Med. 21. 1899.

r, M.: Conception durch ein accessorisches Tubenostium; durch frühe ectopische Schwangerschaft, t, 395, i. 21.

In regard to abnormal ova, however, it is interesting to note that Robert Barnes, who was one of the earliest students of ectopic pregnancy, observed the great frequency of twins in tubal pregnancy, and that Parry confirmed his observation. In fact, the latter found that twins occur four times more frequently in tubal pregnancy than in normal pregnancy, an explanation being that a large twin ovum or abnormal ovum unable to pass through the tube embeds in it. In two cases of ectopic pregnancy which have come under my own observation there is a history of a previous twin birth. This idea is similar to the theory advanced by Sippel that the ovum, in transmigrating across the abdominal cavity from one ovary to the tube on the opposite side, consumed sufficient time to permit the growth to advance to such a degree that it would be unable to pass through the oviduct. In considering the abnormal ovum theory it should be observed that Mall has shown that 7 per cent. of all uterine pregnancies terminate in pathologic ova, that 50 per cent. of the aborted ova are abnormal, that 96 per cent. of the few unruptured tubal pregnancies which he has studied proved to be pathologic, that forty-seven out of eighty-seven tubal-pregnancy fetuses were deformed and that twelve of these eighty-seven fetuses were monstrous and only eight certainly normal. Although this evidence is very striking, the theory does not explain cases of ectopic gestation which have endured to term and have produced normal infants removed by operation.

There is one conjecture hinted at by the embryologists, which may be mentioned here; that is, the possibility of toxic embryotrophy being supplied by the tube. This presupposes that the ovum under normal conditions is nourished by a secretion of the tube. A poison secreted by the tube might have the same influence as physicochemical means have, when used by experimenters to produce monsters from the eggs of marine animals. Drugs or unknown conditions affecting the secretion of the tube might possibly be the remote cause.

Werth, Couvelaire,[13] Williams and nearly all observers have been able to find in tubal pregnancy a confirmation of Hubert Peters' findings in the case of normal pregnancy, but not all authorities agree as to the occurrence of a definite decidual membrane in a pregnant tube. Small areas of decidual cells may be seen, but a definite decidual membrane has never been found. Such areas of decidual cells have been observed by Williams, Webster and Couvelaire. An important observation is that of the occurrence of decidual cells in the tube opposite to the one in which the gestation has occurred. Such observations have been made by Webster, Mandle, Goebel, Janot, Krömer and Williams. Embryologists and present-day students of the decidua believe the decidual cell to be protective to the maternal organism against the too aggressive invasion by the trophoblast of the ovum. Hubrecht in his studies of the hedgehog, Webster and Bryce, Teacher and Kerr in man have emphasized their belief in the protective nature of decidual cells.

This phase of the study of tubal pregnancy has been greatly hindered by the fact that 78 per cent. of tubal pregnancies terminate in tubal abortion; and here the same phenomenon occurs as when abortion takes place in the uterus, namely, hemorrhage. This hemorrhage is so extensive that it destroys the ovum to such an extent that many specimens are rendered worthless for study. This fact, taken together with the fact that the other 22 per cent. terminate in rupture of the tube, points out very clearly the difficulties of studying this question of the occurrence of true decidua. The very early cases never reach us, because the embryo is extruded into the abdominal cavity and is absorbed—the disturbances not being severe enough to cause surgical intervention. In later cases, when an ovum undergoes death or is extruded from the tube and is too large to readily undergo absorption, suppuration may ensue. Such cases may account for some of the ectopic pregnancies which have occurred in pyosalpingitis as described by Hirst. Then, too, extra-uterine gestations have been found to be subject to all the diseases that may occur in intra-uterine pregnancy, that is, hematoma mole, hydatidiform mole and hydramnios, or to be associated with chorio-epithelioma and eclampsia.

Webster's Theory

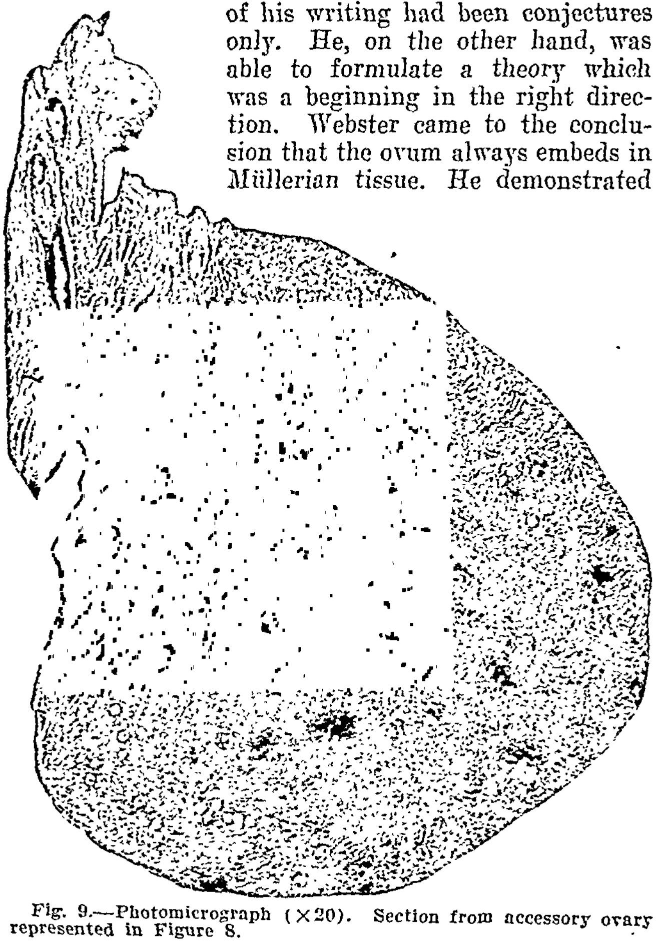

Fig. 9.—Photomicrograph (×20). Section from accessory ovary represented in Figure 8.

In 1895 J. Clarence Webster reviewed all the important literature on ectopic pregnancy and pointed out that the various explanations up to the time of his writing had been conjectures only. He, on the other hand, was able to formulate a theory which was a beginning in the right direction. Webster came to the conclusion that the ovum always embeds in Müllerian tissue. He demonstrated decidual reaction in nearly all of his cases and advanced the view that the ovum could develop only in tissue capable of undergoing such a genetic reaction. His theory, which served as a working hypothesis for all subsequent investigators, brought out the fact that the ovum does not embed in the peritoneum as once supposed. When a number of cases of ovarian pregnancy had been undoubtedly proved, namely, those described by Van Tussenbroek,[14] Thompson and others, it was thought that Webster's theory would become valueless. He soon showed, however, that Müllerian tissue might extend into the ovary. His observations were confirmed by those of de Sinety, Melassez and J. W. Williams, all of whom demonstrated the extension of Müllerian tissue into the ovary. Webster in his theory as to the cause of ectopic pregnancy laid emphasis on the fact that it always embeds in Müllerian tissue capable of undergoing the genetic reaction, and he later mentioned that it was doubtless the special genetic action in areas of decidua-like cells such as found by Schmorl in the ovary in normal pregnancy which might determine embedding in the case of ovarian pregnancy. Small areas of cells similar to decidua cells have been observed under the peritoneum in normal pregnancy and they have been termed decidual nodes. Webster's theory is, then, that implantation occurs at an abnormal site because certain cells there, originally derived from the Müllerian duct, have, through degeneracy, reverted and again acquired their decidual-reacting or genetic property.

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[13] Couvelaire, A.: Etudes anatomiques sur les grossesses tubaires, Paris 1901.

[14] Van Tussenbroek, C.: Un cas de grossesse ovarienne, Ann. de Gynec., 1899, iii, 537.

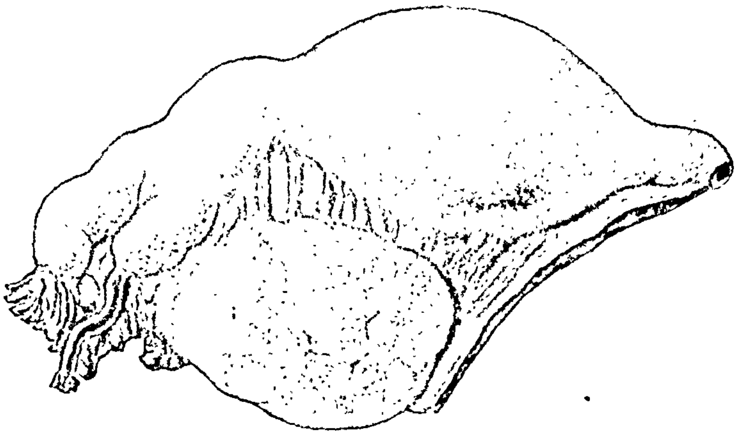

Fig. 10.—Tubal pregnancy in a malformed tube. An elongated accessory tube is attached to the main tube.

THE ANOMALOUS-EMBEDDING-AREA THEORY

I observed and described a very remarkable specimen of ectopic pregnancy removed at necropsy. I was able to examine and study the entire uterus as well as both tubes and ovaries with a view to finding some confirmation of the inflammation or obstruction theories. My results were negative. I found, though, two supernumerary but rudimentary fallopian tubes, one attached to each of the fully developed, apparently normal tubes; which enabled me to offer an explanation for the tubal pregnancy. Starting with the fact that each tube was congenitally malformed, as indicated by the supernumerary tube, I inferred that early in the embryologic development of the individual there was a duplication of the Müllerian ducts, and that with the subsidence in the growth of one pair, those portions which should have formed a second uterus, with all the factors that determine an implantation area, became fused as "rests" with the walls of the tubes which went on to full development, and that such a rest permitted the ovum to embed. Keeping this explanation in mind, I took as a working hypothesis that ectopic pregnancy is determined by an anomalous embedding area. I called attention to the mutual physiologic relation of fecundated ovum to embedding area and referred to the localization of placentation or embedding areas in the uteri of some of the lower animals, as, for instance, the cotyledonary burrs in the virgin cow and the *coussinets* of Hollard in the virgin rabbit. Not being able to recognize in the morphologic details of such areas anything that characterized the special tissue or factor essential to embedding, I could not support my hypothesis by direct evidence, so I set about to examine a large number of specimens of ectopic pregnancy with a view to finding some gross anomaly or malformation which would point to the probable misplacement of embedding tissue during the maldevelopment. Out of twenty-four specimens of tubal pregnancy removed by operation, only nine could be examined with certainty for minor anomalies. The other fifteen specimens were too extensively damaged by the large size of the gestation, the rupture or adhesions, to determine positively whether or not an anomaly existed. Of the nine that could be examined I found one with four accessory ostia, one with an accessory ostium, two with accessory tubes attached to the broad ligament and one with accessory ovaries. Two of the specimens which did not show an anomaly were accompanied by the tubes from the opposite side that had been removed at the time of the operation for the ectopic pregnancy. One of these non-pregnant opposite tubes had an accessory ostium and the other one was short and rested on a parovarian cyst. Of the remaining three apparently normal tubes, one was associated with an ovarian cyst 5 cm. in diameter, evidently derived from the rete ovarii.

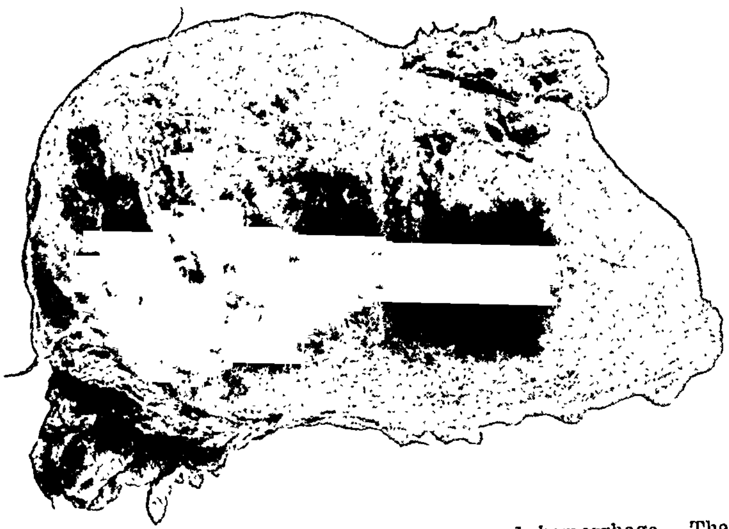

Fig. 11.—Tubal pregnancy with rupture and hemorrhage. The chorionic villi protrude from the rupture; the tube is greatly dilated by blood-clot; the fimbriae are edematous. This is a common type of specimen.

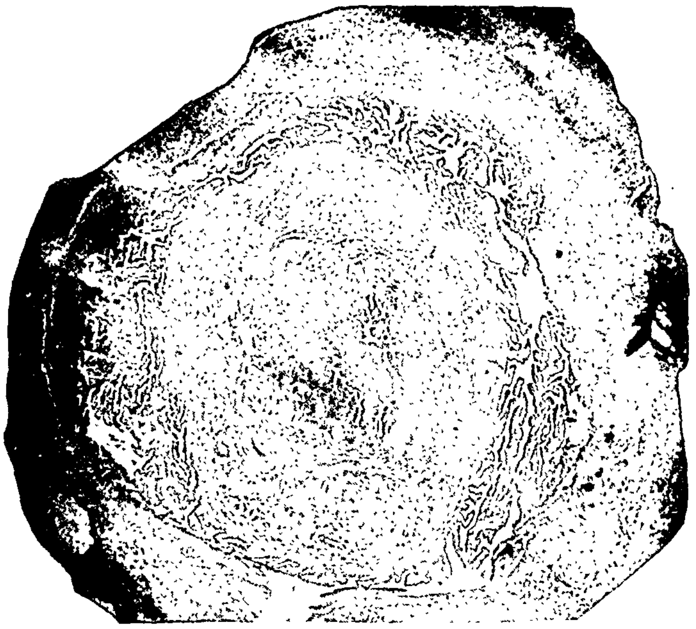

Fig. 12.—Photomicrograph (×4). Transverse section of a fallopian tube distal to the attachment of the ovum. The anomalous condition of a tube within a tube. The tube in the center has a thick muscularis which is surrounded by mucosa thrown into folds which project into the circular lumen. The outer wall of the circular (outer) lumen is composed of mucosa, and, in turn, a muscular layer. The central lumen is lined with normal mucosa. The central lumen ends blindly near the isthmus.

In addition to reporting these findings, I also applied this hypothesis to an interpretation of a very early tubal pregnancy described by Rubin.[15] In Rubin's specimen a very small ovum was found embedded in the tube, proximal to a thickened muscular spur that, in turn, was proximal to a diverticulum of the tube. Rubin regards the spur as having arrested the ovum before it even reaches the diverticulum. His explanation seems too simple; with my hypothesis in mind the spur and diverticulum should be regarded as evidence of maldevelopment. Likewise in a case of ovarian pregnancy described by Graham,[16] in which a remnant of fallopian tube was found in the ovarian mass, I probably should regard it as a malformation or ingrowth of Müllerian tissue into the ovary, while Graham believes it to have been twisted off and separated from the tube by the growth of the ovum.

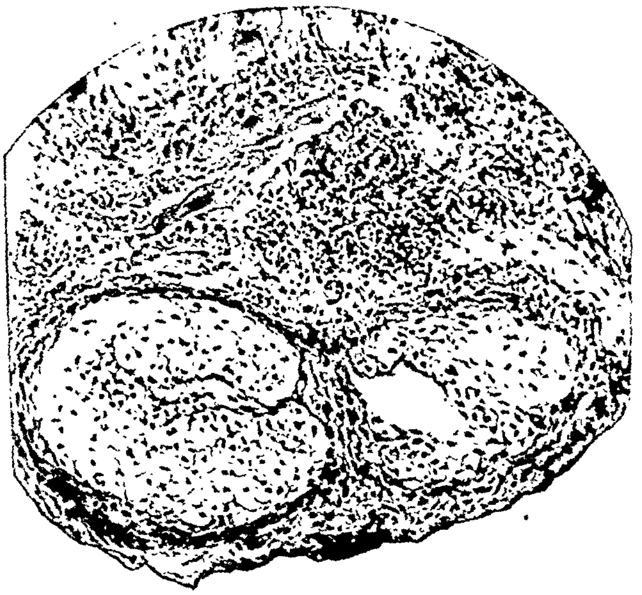

Fig. 13.—Photomicrograph (×250). Nest of decidua-like cells found in the wall of a tube near the peritoneum. The cells seem to be arranged around an endothelial lining which they have crowded in and they seem to have partially obliterated a lumen or space.

Further Evidence

It is in support of my theory that I wish to report further evidence. Before doing so I shall review in logical sequence certain findings which permit approach by steps, as it were, to the theory of an anomalous embedding area.

1. Mauriceau and others have described cases of pregnancy in a rudimentary horn of the uterus.
2. Kehrer has collected eighty-four cases of cornual pregnancy from the literature, in 78 per cent. of which there was no communication between the rudimentary horn and the fully developed horn, the pregnancy having been the result of the transmigration of either the spermatozoa or the fertilized ovum to the rudimentary horn.
3. Henrotin and Herzog, and Sänger have described cases of ectopic pregnancy situated in blind accessory fallopian tubes.
4. Cases of ectopic pregnancy associated with accessory tubes and ovaries have been described by me.

I have examined sixty-eight specimens of tubal pregnancy. In each one I looked for an obstruction, signs of inflammation, and evidences of maldevelopment. In none could I find an obstruction. Some showed mild grades of inflammation which were readily accounted for by the invasion of alien cells and the hemorrhage. I found malformations in thirty-seven specimens:

Six had large irregular diverticula which could not have been caused by the growth of the ovum (Figs. 1 and 2).

Five had accessory ostia (Fig. 3).

Three were associated with anomalies of the opposite tube (Fig. 4).

Two presented such an anomaly as represented in Figure 5.

Two had accessory ovaries (Figs. 8 and 9).

One had an anomalous tubule attached to the broad ligament.

Five had accessory tubes (Fig. 10 and Figs. 6 and 7).

Nine were simple dilatations of the tube by the growth of the ovum (Fig. 11).

One showed a most unusual anomaly, a tube within a tube (Fig. 12).

Three showed nests of decidua-like cells (Fig. 13).

All of the anomalies found were examined microscopically in order to prove definitely their exact nature.

In none of the specimens was I able to find a true decidual membrane. When the ovum was still *in situ* it was found embedded beneath the mucosa which, with the blood-clot, covered it on the side next to the lumen of the tube, while on the side next to the muscularis it was attached to a rich layer of cells derived from the trophoderm which had invaded the maternal tissues. These cells and the secondary inflammation caused by them gave an appearance, in some cases, that might readily have been mistaken for tuberculous inflammation, which in former years was given quite a place as a cause of ectopic pregnancy. In recent years less has been written about tuberculous inflammation as a cause of ectopic pregnancy, and I take this to be due to our better knowledge of the cells derived from the trophoblast, of the syncytial cells and of foreign-body giant-cells.

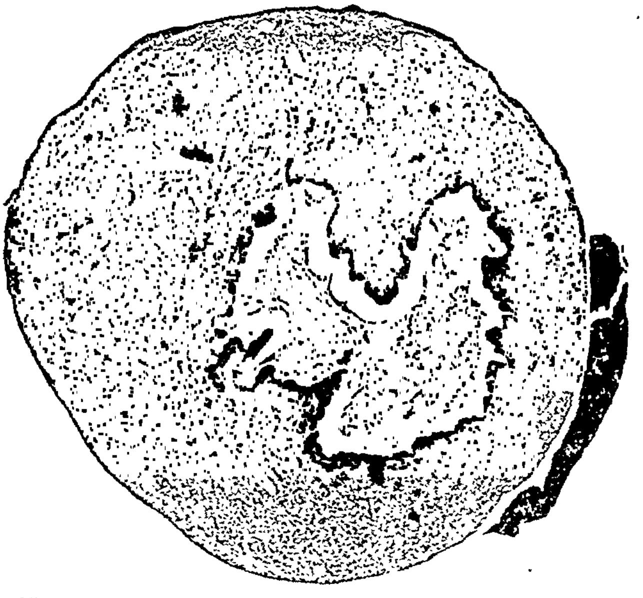

Fig. 14.—Cross-section of an accessory tube attached to the broad ligament of a tube which had a nest of decidua-like cells near its peritoneal surface.

We also have more knowledge of the membrana decidua compacta, which we now know not to occur as a regular distinct membrane in a pregnant tube. I could find no true decidua in any of my tubes. In three there

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[15] Rubin, I.: Early Ovum in a Fallopian Tube, Proc. New York Path. Soc., 1912, xii, 107.

[16] Graham, G. S.: A Case of Ovarian Pregnancy, Jour. Med. Research, 1912, xxvi, 499.

As the function of the adrenal cortex has so far been a complete mystery, the isolation of the above-described crystalline principle and its relation to the vasoconstricting body of the blood is of especial interest.

A full account of our work will be published later in the *Journal of Pharmacology and Experimental Therapeutics.*

ACCIDENTS IN TRANSFUSION

THEIR PREVENTION BY PRELIMINARY BLOOD EXAMINATION: BASED ON AN EXPERIENCE OF ONE HUNDRED TWENTY-EIGHT TRANSFUSIONS *

REUBEN OTTENBERG, M.D.
AND
DAVID J. KALISKI, M.D.
NEW YORK

Accidents following transfusion have been sufficiently frequent to make many medical men hesitate to advise transfusion, except in desperate cases. It has been our opinion since we began making observations on this question in 1908 that such accidents could be prevented by careful preliminary tests, leading to the exclusion of agglutinative or hemolytic donors. Our observations on over 125 cases have confirmed this view and we believe that untoward symptoms can be prevented with absolute certainty.

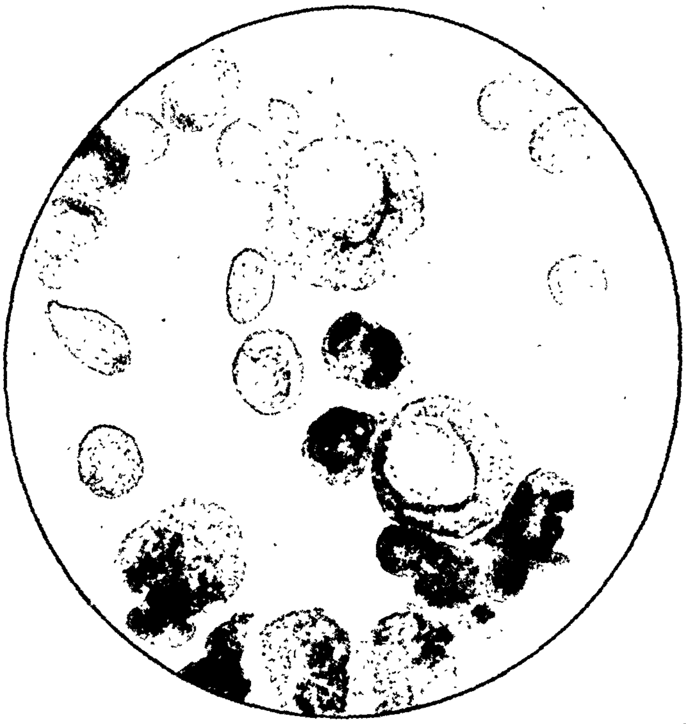
It has been the general impression that preliminary blood-tests ought to be done to determine the compatability of the donor's with the patient's blood, but there has been little direct observation as to the correspondence between the test-tube phenomena of agglutination and hemolysis and symptoms arising after transfusion.

Scattered reference to the hemoglobinuria following transfusion have made it clear that the occurrence of hemolysis between the donor's and patient's blood is a real danger. Thus, Flörcken[1] reports hemoglobinuria in two out of five cases which he transfused, and Gray[2] reports hemoglobinuria in one out of three transfused cases. Suttner,[3] reporting four transfusions, says: "One case resulted fatally from hemolysis, which might have been prevented had not its urgency required prompt action." Pool[4] reports a case of delirium and extreme jaundice following transfusion. In the case of Pepper and Nisbet,[5] a fatal hemoglobinuria followed a second transfusion for pernicious anemia. Cases have been reported by Crile,[6] Watts[7] and others. Rehling and Weil[8] report a case with severe hemoglobinuria which was anticipated by blood-tests. Undoubtedly many other cases that have occurred have never been reported.[9]

The question whether or not interagglutination is a danger in transfusion is still an open one. Our experience leads us to believe that its occurrence under certain circumstances may vitiate the result of transfusion and should be avoided, although no one has yet shown that it causes extensive thrombosis or embolism as we feared at first. The few observations of Schultz do not bear directly on the question because his transfusions were small in amount as compared with the amount usually transfused by the direct method.

In emergencies and occasionally at other times, relatives or friends of the patient have been used as donors. Their blood should of course be tested. Iso-agglutinins are inherited, as first pointed out by Ottenberg[10] in an article with Epstein, published in 1908. No certainty can be secured, however, without examination, as each individual inherits from either one of his parents.

We shall omit any detailed reference to the technic of agglutination and hemolysis tests. We use a modified Wright's capillary pipet method, first described by Epstein and Ottenberg.[11] This method has the advantage that it requires only as much blood as can be obtained from a finger prick from both patient and donor. With this method it is possible to examine ten or twelve donors within two or three hours.



Blood-smear of patient made during transfusion. The patient's serum was agglutinative to the donor's blood-cells. Phagocytosis was observed only in cases of this kind.

We have always performed Wassermann tests on prospective donors. The necessity of this has been demonstrated by the finding of five positive Wassermann reactions in prospective donors. In a well-equipped laboratory the Wassermann and other tests can be performed simultaneously and all can be completed within three hours.

HEMOLYSIS

The hemolysis of one human blood by another is a pathologic phenomenon. It was formerly thought to be characteristic especially of carcinoma and tuberculosis, but it has been shown[12] to occur in a great variety of diseases.

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* From the Pathological Laboratory of Mount Sinai Hospital, New York. Part of this work was done while one of the authors held a Eugene Meyer, Junior, Fellowship in Pathology.

[1] Flörcken, H.: Direct Transfusion of Blood; Five Cases, München. med. Wchnschr., 1912, No. 49; abstr., THE JOURNAL A. M. A., Jan. 18, 1913, p. 250.

[2] Gray, F. D.: Direct Transfusion, Med. Rec., New York, 1911, lxxix, 198.

[3] Suttner, C. N.: Arteriovenous Transfusion by the Crile Method, Northwest. Med., 1911, iii, 192.

[4] Pool, E. F., and McClure, R. D.: Transfusion by Carrel's End-to-End Suture Method, Ann. Surg., October, 1910, lii, 433.

[5] Pepper, William, and Nisbet, Verner: A Case of Total Hemolysis following Direct Transfusion of Blood by Arteriovenous Anastomosis, THE JOURNAL A. M. A., Aug. 3, 1907, p. 385.

[6] Crile, G. W.: Transfusion with Note on Hemolysis, Surg., Gynec. and Obst., 1909, ix, 16.

[7] Watts, S. H.: Suture of Blood-Vessels, Ann. Surg., September, 1907, xlvi, 373.

[8] Rehling, M., and Weil, R.: Avoidance of Hemolysis in Transfusion, Am. Jour. Surg., March, 1909.

[9] Intravascular hemolysis causes hemoglobinuria only when it exceeds a certain limit. Smaller amounts of hemoglobin are removed by the tissues. (Boycott and Douglas: Jour. Path. and Bacteriol., January, 1910, p. 313). This is probably why Crile did not notice hemoglobinuria in cases of tuberculosis to which he refers (Tr. Am. Surg. Assn., 1909, xxvii, 80).

[10] Ottenberg, R., and Epstein, A. A.: Proc. Path. Soc. New York, 1908. Also von Dungern and Hirschfeld: Ztschr. f. Immunitätsforsch., 1910, v, 531; 1910, vi, 284.

[11] Epstein, A. A., and Ottenberg, R.: A Method for Hemolysis and Agglutination Tests, Arch. Int. Med., May, 1909, p. 286.

That it is necessary to make tests of this kind if hemolytic accidents are to be avoided, is evident from the fact that the blood of seventeen out of 128 of our patients was actively hemolytic for several different donors, as well as from the published reports of accidents and fatalities in cases in which preliminary tests had not been made.

The diseases in which hemolysis was observed were:

	Cases
Purpura hemorrhagica	2
Carcinoma of the stomach	3
Carcinoma of the rectum	1
Lymphatic leukemia	4
Pernicious anemia	2
Chronic osteomyelitis (due to *Staphylococcus aureus*)	2
Pelvic abscess	1

There were three instances of reverse hemolysis, that is, hemolysis of patients' cells by donors' serum. The first was in a patient who was suffering from postoperative hemorrhage. On subsequent examination the donor was found to be suffering from tuberculosis. The others were in a case of pelvic abscess and a case of pernicious anemia.

In all except two of the cases cited the patients' serums were hemolytic with only some, but not all, of the prospective donors' bloods, and by examining a certain number of men, one was eventually found who was not hemolytic with the patient. In two of these instances, on account of the desperate condition of the patients, hemolytic transfusions had to be ventured. In two additional cases (not included in the list) transfusion had to be abandoned because the serum of the patients was powerfully hemolytic to the cells of every donor examined. One of these was a case of lymphatic leukemia, and the other of pernicious anemia.

One of the hemolytic transfusions was done in a case of pernicious anemia. The serum of this patient was agglutinative and weakly hemolytic to the cells of the donor. The transfusion was followed by an intense hematuria which lasted about twenty-four hours, during which the hemoglobin dropped from 34 to 31 per cent., instead of rising further, as almost invariably happened after transfusion in other cases. In spite of the loss of the transfused blood, transfusion apparently exerted a favorable influence on the course of the disease, as the patient improved slowly but steadily during the following month.[13] The patient returned to the hospital eight months later, and a second transfusion was done. This time a donor was found whose blood did not agglutinate or hemolyze when mixed with that of the patient, although the patient's serum was hemolytic to the cells of four of ten donors. This transfusion was successful; the patient was greatly improved, and her life was prolonged for a year and a half.

In the other case (one of acute lymphatic leukemia), in which test-tube hemolysis was noted between the blood of the patient and that of the donor, the patient's serum sharply agglutinated the donor's cells, but only slightly laked them after three and one-half hours in the thermostat. There was no hemoglobinuria, but blood-smears made during and after the transfusion showed phagocytosis of red blood-cells by leukocytes in the circulating blood. The patient died forty-two hours after the transfusion. The case will be more fully discussed later under the heading of agglutinative transfusion (see photomicrograph).

In only four other cases in the whole series were any red blood-cells found in the urine after transfusion, and in these four cases they were found only in small numbers in the centrifuged sediment.

Jaundice occurred after transfusion in only one case in the series, and in this it was slight and transient, disappearing in two days. It may have been due to some other cause, as the patient had a carcinoma of the stomach (Old Series, No. 46).

The absence of hemoglobinuria in over one hundred cases in which hemolytic donors were excluded by examination and its occurrence only once in the whole series, and then in a case in which the test-tube hemolysis had been noted, proves that the danger of hemolysis can be absolutely excluded by careful preliminary tests.

AGGLUTINATION

Iso-agglutination, unlike isohemolysis, is not a pathologic phenomenon, but occurs between normal human bloods. All human beings fall into four permanent hereditary and sharply separated groups with regard to whether their serums agglutinate each other's red blood-cells or not. When the blood of two persons belonging to the same group is mixed, no agglutination occurs. When the blood of two persons of different groups is mixed, agglutination, either of one by the other or of each by the other, always occurs.

It is not necessary here to go into details of the grouping. The important questions are whether or not it is necessary to pay attention to agglutination in selecting donors and what the influence of agglutination is on the result of transfusion.

Human iso-agglutinins are present in only relatively weak concentration, generally not being active at all in greater dilution than 1:10 or 1:20. All the agglutinin present in a given volume of serum can be absorbed by a small volume of susceptible cells.[14] The result of this is that, when a given volume of serum is mixed with a large volume of susceptible cells, the individual cells are only feebly sensitized and no gross agglutination is seen.

In the instance in which the serum of the donor is agglutinative to the cells of the patient, the plasma of the donor on transfusion will be diluted by an excess of the patient's plasma and will meet with a large excess of the agglutinable cells. These are the conditions under which, in vitro, the minimum amount of agglutination, if any at all, is observed. In practice, in all such transfusions, as we shall show later, no unfavorable results were obtained (four instances).

When the patient's serum is agglutinative toward the donor's cells, the conditions for sensitization of the cells of the donor are much better, as a smaller bulk of blood-cells is introduced into a larger volume of agglutinative plasma. Even here, however, it is probable that only in exceptional instances can massive clumps of agglutinated cells be formed, such as are seen in the test-tube when a dilute suspension of the cells is mixed with agglutinative serum and allowed to rest quietly until agglutination is complete. There is no doubt, however, that some sensitization of the cells occurs under these conditions. It is in these cases only that phagocytosis of red cells in the circulating blood has been observed, twice by us and once by Hopkins.[15]

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[12] Ottenberg, R., and Epstein, A. A.: The Diagnostic Value of Hemolysis in Cases of Cancer, Arch. Int. Med., June, 1909, p. 467.

[13] It is possible from the work of Hess and Saxl (Deutsch. Arch. f. klin. Med., 1912, cviii, 181), that the material from some of the destroyed cells may have been used in the reconstruction of blood.

[14] Ottenberg, R.: Transfusions and the Question of Intravascular Agglutination, Jour. Exper. Med., 1911, xiii, No. 4.

We have seen four transfusions in three cases in which the serum of the donor was agglutinative to the cells of the patient. There were no untoward symptoms in any of these four transfusions. In two of the four transfusions numerous blood examinations showed absence of phagocytosis in the circulating blood. In the other two transfusions no search was made for this. Of these three patients, one, with gastric ulcer, ultimately recovered completely while the other two died within a few days of causes that had nothing to do with the transfusion (shock, following resection of the stomach in one instance, and liver abscess in the other).

We have seen three transfusions in which the serum of the patient was agglutinative to the cells of the donor. In two of these instances, already cited, the serum was also slightly hemolytic.

In the first of these (referred to previously), an intense hematuria occurred. This was one of the early cases and no observations were made as to the occurrence of phagocytosis. In the second case, one of acute lymphatic leukemia, the patient's serum was agglutinative and slightly hemolytic to the donor's blood-cells in three and one-half hours. Blood smears at the completion of the transfusion showed phagocytosis of the red blood-cells by polynuclear leukocytes. The patient died forty-two hours after the transfusion. There was no hematuria in this case, but the amount of hemolysis in the test-tube was minimal.

The third instance in which the patient's serum was agglutinative to the donor's cells was also a case of pernicious anemia. Blood-smears made five minutes and fifteen minutes after the start of the transfusion and at the end of the transfusion showed phagocytosis of red blood-cells by polynuclear leukocytes (see photomicrograph). The patient passed no urine after the transfusion, and died eight hours later. Necropsy revealed an extensive phagocytosis of the red blood-cells in the microscopic sections of the lymph-nodes and spleen.

The occurrence of phagocytosis of the red cells in the circulating blood is an exceedingly rare phenomenon and is in every instance due to injury or destruction of red cells. Aside from the present instances, it has been described as occurring, so far as we have been able to find, only in paroxysmal hemoglobinuria and in potassium chlorate poisoning.[16] Our control observations of over thirty non-agglutinative and non-hemolytic transfusions show that the phagocytosis was not due to the nature of the diseases (pernicious anemia, leukemia) in which it occurred, because among the control cases were several cases of each of these diseases with no phagocytosis after transfusion.

In the great majority of cases transfused in which hemolysis and agglutination have been excluded by tests, febrile reactions following transfusions have been entirely absent. In a considerable number of cases (twenty-one out of 128), there have been slight febrile reactions, lasting one or two days, probably to be regarded as ordinary surgical fever. In less than 10 per cent. of the cases (ten cases in 128), more severe reactions occurred, often with chills, occasionally with vomiting. In none of these cases did symptoms last more than two days. In none of them did hemoglobinuria or hematuria ensue. The occurrence of these symptoms has been variously attributed by some authors to hemolysis or agglutination, or (by German authors who studied indirect transfusion) to the transfusion of fibrin ferment.

The first two causes can be excluded in our cases. Fibrin ferment cannot be a factor because the transfusions were direct artery-to-vein or vein-to-vein transfusions; nor do the pathologic conditions for which the transfusions were done in the cases that had severe reactions throw any light on the cause of their occurrence.

The same thing is true of skin eruptions which occurred in about 10 per cent. of the cases. The cause of skin eruptions is evidently connected with the cause of severe febrile reaction, because five of the eleven cases which showed skin eruptions were in the group which showed severe febrile reactions. Two of the instances of skin eruption were cases of severe general erythema, and it is interesting that in both of these cases the blood-serum of the patients was powerfully hemolytic for the blood-cells of the majority of proposed donors, but the particular donor chosen was one whose blood-cells were not laked. It seems, therefore, as though the cause of the extensive skin eruption in these cases had some connection with the cause of the hemolytic poison, but was not identical with it.

SUMMARY

1. Accidents in transfusion due to the occurrence of hemolysis or agglutination of the donor's blood-cells by the patient's serum, or vice versa, can be absolutely excluded by careful preliminary blood-tests. We have been able to prevent accidents of this kind in 125 transfusions.

2. The relation between test-tube hemolysis and intravascular hemolysis is close, and it seems likely that in all cases in which there is test-tube hemolysis, some intravascular hemolysis occurs. When this exceeds a certain limit hemoglobinuria results.

3. The occurrence of agglutination (between the blood of the donor and that of the patient) need not be regarded as an absolute contra-indication to the transfusion, but non-agglutinative donors should be chosen whenever possible.

4. Phagocytosis of red blood-cells by leukocytes in the circulating blood of the patient transfused is undoubtedly connected with interagglutination of the two bloods; it occurred in our series in two cases in which the serum of the patients was agglutinative toward the cells of the donors (in one of the cases the serum was also hemolytic), and it did not occur in any of thirty-five non-agglutinative transfusions in which it was carefully looked for. These negative cases included two cases with extensive urticaria and one case with severe febrile reaction after transfusion. In the cases in which the serum of the donor was agglutinative toward the cells of the patient, no phagocytosis of red cells in the circulation was seen.

5. In selecting donors with regard to agglutination, the agglutination of the donor's cells by the patient's serum is more important to avoid than the reverse.

6. Febrile reactions or urticaria and other skin eruptions occur after about 10 per cent. of transfusions, irrespective of hemolysis or agglutination, and are not due to fibrin ferment or to blood platelet destruction. These reactions, however, are never serious and the patients have done well in spite of them.

The authors wish to thank Dr. F. S. Mandlebaum for the photomicrograph.

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[15] Hopkins, J. Gardner: Phagocytosis of Red Blood-Cells after Transfusion, Arch. Int. Med., September, 1910, p. 270.

[16] Huber, O.: Changes in Blood in Potassium Chlorate Poisoning, Deutsch. med. Wchnschr., Oct. 10, 1912, p. 1923.

A STRIKING ACQUIREMENT OF VISUALIZING POWER AND THE DEVELOPMENT OF DREAMS FOLLOWING A CEREBRAL TUMOR EXTIRPATION

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The relation of intracranial growths to mental activity is recognized as a very intimate one. Most of us are familiar with the changes in memory and disposition, the states of hebetude, lethargy and stupor, the decrease in power of attention, the so-called "dreamy states," the abnormal emotional states, fatigueability, etc., associated with cerebral tumors and their usual concomitant state of increased intracranial tension. Pfeifer[1] has recently given quite a complete summary of the mental disturbances found in these types of cerebral cases.

The relation of brain tumors to mental imagery, however, seems to have called forth but little comment.

Since 1880, when Galton made his classical study of the visualizing faculty, students of psychology have been able to classify persons in this respect. We have known that memory, that is, knowing and remembering, takes place by means of visual images, by auditory images, by motor and tactile images or by various combinations of these types—the usual method. The case we have to present represents a striking example of the appearance (reappearance probably) of the visualizing power following immediately—a matter of hours—in the wake of a cerebral tumor extirpation.

HISTORY OF CASE

Patient.—Miss H., aged 22, teacher of domestic science, born in Massachusetts, of American parentage. Service of Professor Cushing in the Peter Bent Brigham Hospital, Boston. Patient comes from a cultured family; her father is a professional man. There is nothing similar to patient's trouble on paternal or maternal sides. Personal history unimportant except that twelve years ago patient was struck with a croquet mallet over the right parietal region (area of tenderness found in examination), causing a severe nosebleed. Patient does not recollect having been unconscious or confined to bed. She has always been stout since puberty. She was a student until June, 1912, when she was graduated from a college in Boston. Though the school work had been constantly heavy, she enjoyed it and was able to complete her studies more or less successfully. (See later notes.)

Present Illness.—Vision: Blurring of vision began in January, 1912. The retinal vessels were found to be tortuous. Her glasses were changed and symptoms disappeared until December, 1912. At this time patient complained of eye-strain. In January, 1913, she began to have difficulty in accommodation, followed by decrease in visual acuity. On admission to the hospital patient had "spells" in which it was difficult for her to differentiate people.

Paresthesia: Numb-tingling sensations began in April. 1912. First noticed in left upper extremity, beginning in hand and extending to pectoral region and left side of face. Tongue and buccal mucous membrane involved. Came in brief attacks; later immediately antedated.

Convulsive Seizures: The first definite convulsion appeared at night, August, 1912; it involved the entire body. In the beginning such attacks were repeated at intervals of a month. Later they became more frequent and more severe. A typical attack consisted of: sensory aura (previously referred to) without cry; there was an indefinite feeling of malaise and severe headache with twitching of fingers of left hand, followed by involvement of hand, forearm and upper arm, in order; loss of consciousness and convulsion of entire body; cyanosis; frothing at the mouth; labored breathing and involuntary micturition. Duration, a few minutes. Consciousness recovered in about fifteen minutes; tired and "used-up" feeling, but fairly bright.

Headache: This was severe in and following seizures. Between attacks slight occipital and posterior cervical pain, "neuralgic" in character. Some headache as a junior in college.

Vomiting: This occurred at the onset of a few attacks and was not often projectile in character; occasionally not associated with seizures. There was some nausea.

Pain in Left Pectoral Region and in Left Arm: First noticed in June, 1912, together with the numb sensations. Later the patient experienced also a severe, throbbing, burning sensation in these parts.

Dizziness: This was occasionally present when arising in the morning. Sometimes, in descending stairs, this necessitated holding on to the banister, but patient never fell. Objects at no time appeared to move.

Physical Examination.—Thorax and abdomen unimportant. Blood-pressure 110 (Tycos). Blood: White blood-cells, 8,900; hemoglobin, 100 per cent. (Sahli). Urine not unusual. Temperature and pulse normal.

Neurologic Study.—(Drs. Cushing and Bagley)—Head: Marked tenderness over right posterior parietal region.

Skin: Firm and elastic. Rather marked panniculus, evenly distributed.

Cranial Nerves: Unimportant except for,

N. II: Eye-Grounds (Dr. Clifford Walker). Fundus right eye, acuity 20/30. Disk elevated 7 D. Entirely obliterated by new tissue formation of considerable duration, under which engorged and tortuous veins and narrow arteries were deeply imbedded. A few punctate hemorrhages with one large flame-shaped hemorrhage. Peripheral fundus slightly edematous. Fundus left eye, acuity 20/40. Disk elevated 7½ D. Otherwise much as in right eye.

N. III: Right pupil larger than left. Both sluggish to light, right more than left.

Cerebrum: Frontal.—Slight disturbance in memory (of recent appearance) for names and small events. Temporal.—No aphasia; no uncinate gyrus symptoms; no hemianopsia (no constriction of form fields. Slight constriction for colors in left eye. No scotomas made out). Parietal.—(sensory) Paresthesia with attacks. Touch, pain and temperature good. Muscle sense good. No astereognosis. (Motor) Epileptic attacks. Marked muscle fatigue following slight exertion, especially in left arm. Occipital.—No hemianopsia. No visual hallucinations.

Cerebellum: Romberg negative; no nystagmus. No disturbance of gait. Some dizziness. Diadokokinesia much better with right arm. No definite ataxia, though left arm moved less well than right.

Reflexes: Superficial.—Elicited. Deep.—Knee- and ankle-jerks not obtained on either side.

Sphincters: Loss of bladder control in attacks.

Vasomotor: No changes.

Extremities: Uses left and right hands equally well.

Operation.—On March 28 Dr. Harvey Cushing performed a right exploratory craniotomy and decompression. A generous-sized bone-flap was turned down from the parietal region. There was a depressed area in the dura just below the parietal eminence, corresponding to the tender spot on the skull found during the examination. There was also a kind of conical protrusion of the inner table of the skull about the size of a five-cent piece extending to a fairly sharp point. The dura was fairly tense and unusually vascular. By reflecting the peripheral dura upward a definitely demarcated area of dark red appearance was seen in the parietal cortex which proved to be new growth. A small isolated island of dura was left, about 5 cm. in diameter, which was attached to the underlying tumor mass. This occupied the region of the angular gyrus. The new growth was carefully dissected from the surrounding cortex and finally delivered in toto. It was quite vascular and had a soft, pulpy consistency. At no point did it seem to invade the cortical substance. The cavity left in the hemisphere gradually filled in, so that within a short time the brain had resumed its normal outlines; in fact, tended to protrude from the dural opening. The exostosis of the inner table was rongeured away and the bone-flap replaced.

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[1] Pfeifer: Arch. f. Psychiat., xlvii, 2, 558, 1912.

Pathologic Report.—(Dr. Rhae). The fresh tumor measures 4.8 by 2.6 cm. by 4.6 cm. Weight, 48.5 gm. Microscopic sections made in the plane of its greatest diameter are roughly hemispherical with a slight concavity on the flattened side. Throughout the greater portion of the section there is a limiting capsule of dural tissue. The tumor itself shows a connective tissue stroma, a good blood-supply and numerous tumor-cells. The latter vary little in size. Their nuclei are oval and most of them have a distinct nucleolus. No fibrils are demonstrated in connection with them and none show mitosis.

Diagnosis: Endothelioma of the dura.

Recovery.—Patient came out of the ether rapidly and by 9 p. m. was in excellent condition. She conversed intelligently with those in charge of her. Discharged on the forty-sixth day following the operation with remarkable subjective and objective improvement. Convalescence uninterrupted for a number of weeks. Recently some minor epileptiform attacks.

PSYCHOLOGIC STUDY

On the morning following the tumor extirpation one of us noted that the patient appeared to be in unusually good spirits. A little questioning revealed the fact that she was quite excited over the ability, which she seemed to have acquired quite suddenly, of making mental pictures of the objects and persons in the room, a faculty, she asserted, quite foreign to her previous capabilities. Further inquiry led to the discovery that she had dreamed during the night and that this dream consisted of mental images, which will be described in detail later.

Formerly her dreams had consisted only of images of the motor, auditory and tactile types. A brief statement regarding her education during the past few years will serve now to substantiate the patient's assertion that previously she had had no visual imagination.

Up to the age of 13 the patient was looked on as being as bright as her associates. Throughout her college life, however, she was signalized by her roommate and family as having an exceedingly poor memory. English was particularly difficult. She was unable to remember eight or nine lines of poetry or prose, and then but for a short time. This much was accomplished only by tedious grind and repetition. History and geography were likewise very difficult. Interest was never taken in any of these. She could at no time picture to herself kings or battlefields, and mental images of cities and landscapes were unknown to her.

Mathematics was perhaps less difficult, but she never was able to visualize the problems. Her favorite studies were chemistry and biology, because, she explained, in these sciences she was able to see and use her hands in her work with the subject material. The solution of each problem, as it arose, was more a matter of physical exertion than a mental effort with abstract data. She liked the practical rather than the theoretical, the mechanical more than the literary.

In memorizing her work, a chemical formula, for example, she would start with one group and then reason out what the opposing groups should be. In drawing a structural formula she had no mental picture of it, but accomplished her task by remembering chiefly the movements of her hand. Her closest associate described her as "a freak all her life, lacking in some things and ahead in others, though never unusual enough to attract the attention of outsiders."

Taste and smell memories had always been keen—in fact, too acute at times, to the patient's discomfort.

Auditory images were frequent and distinct. Motor and tactile images as well were constantly good it seems.

About one and one-half years previous to her admission to the hospital the patient studied psychology. In the course of the class work she was led to scrutinize her ability in imagery. To her great astonishment she found that her classmates differed from her essentially, in that they could visualize and she could not. When told by the instructor to describe the mental images formed after the word "fire-engine," she enumerated only the sound of the gong, the clatter of the horses' hoofs and a rushing feeling. She could picture nothing of the horses, engine, men or streaming smoke. In recalling a flower, a rose for example, she recollected only "the feeling of smoothness against my cheek and the pricks from the thorns."

Drawing had always been difficult. In trying to sketch a maple leaf she remembered the sharp points of the leaf by the feeling of pricking and the general outline by the position of the fingers surrounding it.

In traveling her parents had noticed that she usually carried a collection of photographs. These were frequently inspected. The patient explains now that at no time was she ever able to recollect the faces of even her father and mother. In thinking of them she felt obliged to look at their pictures. For the scenes of her home she likewise had no mental imagery.

Novels, it seems, had very little attraction for her. She described them as dull and uninteresting, particularly the descriptive passages. Throughout her college life, at least, motor, tactile and auditory images appear to have played the most important rôles in memory.

These examples, corroborated by instructors and family, afford some idea of the subject's mental imagery during the several years preceding the cerebral operation. With the tumor extirpation the readjustment rapidly became apparent to the patient herself, first of all, and then to the examiners in charge of her. The development of the new type of imagery, moreover, was strikingly definite. Within a short space of time she could picture to herself flowers held before her, differentiating correctly the various shades and outlines. A book held before the eyes could later be visualized in all its details—binding, title, decorations, etc. A doctor, on leaving the room, was recollected in pictures of form, clothing and expression. Her pet dog, which had not been seen since admission to the hospital, was now pictured clearly, to her great astonishment and pleasure.

One afternoon when we entered her room together she enthusiastically exclaimed:

"Oh, I have had such a wonderful new experience! My nurse has just been reading a book to me. Let me tell you about it. . . . For instance, Miss M. was reading about a row of houses (description formerly bored her greatly, as noted before) which were so crowded together that they squeezed their bay windows out in front, and their living-rooms so narrow that they resembled parlor cars. I can see these houses with their bay windows perfectly now. And the parlors—why, I can see the car interiors with their rows of windows and their easy chairs, and even the dust on the window-ledges. Yes, I can see the colors perfectly." The images, however, did not appear to be overdistinct. Their intensity corresponded, apparently, more or less closely to the visual impressions.

STUDY OF THE DREAMS

The psychologic development of this interesting case follows two paths. The first points to the past; the second points to the future. They both start from the patient's dreams. As has been mentioned, the night following the operation the patient had a vivid visual dream. That it was visual struck her with astonishment. At first she repeatedly said she could not remember ever having had such an experience before in her life. After several days of consideration of her newly acquired visualizing capacity, however, it was found that this first memory, or lack of memory, was misleading. She recollected that when she was about 8 she remembered seeing a girl with red hair on a bridge with a broken rail which sagged in the middle, and thinking at the time that she had seen it before. Since then she has "remembered" the occurrence, but could not visualize what it was about. She can remember visually very well now going to a shoe factory (before she was 8) and seeing the long bench on which the workmen cut out the leather. But she cannot visualize a "memory" of anything happening after that time. While she is unable to recollect actual occurrences of a visual nature since 8, she nevertheless can imagine, visually, persons and places which she must have seen. This is interesting from a psycho-physiologic point of view, since the patient's vision was always good up to the present illness, notwithstanding the fact that she had no visual memory or imagination.

The second path we wish now to follow concerns itself with the development of the dreams in significance and complexity. In her first visual dream the patient thought she saw her physician, a trunk and a gray wall. The picture was without color, other than being in black and white, like a photograph. It also had no action.

According to the Freudian theory of dreams, a dream is a symbolical manifestation of a repressed wish—it is a hallucinatory wish-fulfilment. Is that the case here?

Questioning the patient brought out the fact that she regarded her physician as her savior. She felt that she was rapidly approaching a fate, perhaps worse than death, and her one forlorn hope lay in this possibly successful operation. She said, "There was nobody I'd rather have seen than Dr. ——" (naming her physician). Several other associations must also have operated to bring a doctor to her mind. In the first place, her father was a doctor — the author of her being. In the second place, the physician to whom she had been taken for consultation diagnosed her condition correctly, and it was at his request that the operation was performed. Thus this image of her dream was at least triply determined by weighty determinants — weights having the significance of life and death, bodily and spiritually. Here another law of dream formation seems fulfilled, the law that single elements of a dream are overdetermined, that is, a number of motives unite to produce a single psychic effect.

The desire in this dream is undisguised. In this respect it is like the dream of a child. She wanted to see her deliverer and so she did. She wanted to go home and so she saw her trunk. Distortion comes in dreams only when what is wanted has to be concealed for social, ethical or other reasons. There was a slight repression, however, even here. Without this there might have been no dream. It is obvious that while she might properly desire to see the man who had saved her, she would have to repress that desire since he would be too busy to come merely to gratify her in letting her look at him. Thus here a slight ethical and social reason constrained the patient to repress her wish, which then fulfilled itself at no expense to any one, in a dream image. As a visualizer the patient was a child again, and dreamed like a child of just what she wanted. But as a visualizer she grew very rapidly, and, as she did so, her dreams grew more distorted, more obscurely symbolic and expressed more fundamental desires.

The second dream was somewhat more complicated, and in part a very interesting symbolical revenge. One of the doctors said she looked like a tomboy with her head shaved. She resented this a great deal, as she later admitted. She felt chagrined, she asserted, at having a man tell her she lacked in feminine attributes. That night she had her revenge. She dreamed that the offending doctor was a child, in a very lacy gown with lots of pink ribbons and bows. Here one is immediately struck by the increased complexity of the dream. It riots in color and form and has a conscious emotional content, which serves to distort it and thus to disguise its fundamental significance.

A number of possible wish fulfilments are manifest. The patient revenges herself against the offending doctor by making him look ridiculous. She also places him in her power where she can train him and make him do as she desires. In this way, perhaps, she can teach him better manners as he grows up. Again, in picturing a child she demonstrates to herself that she does not lack in fundamental feminine attributes and capacities. Again the dream is childlike in its clarity. Here manifest and latent contents are almost identical. A short conversation with the patient would convince almost anyone that she was the personification of the *ewige weibliche*. As many believe, the fundamental desire of such a woman is to have a child. Here the desire appears to be almost openly gratified, the only concealment being a slight displacement of affect. The element of ridicule is emphasized at the expense of the deepest desire—the desire for a child itself.

What is apparently the fundamental law of dreams, that is, dreams are wish fulfilments, is thus followed in both dreams recorded above. The law of dramatization is also exemplified, not only in these two dreams, but in all that follow. This law states that dreams are like pictures and that ideas have to be expressed dramatically.

The law of condensation—many motives being represented by one image—is satisfied here also. Thus the dream appears to be a compromise formation. The images selected are those which will satisfy at the same time many more or less divergent motives.

The next dream is far more complicated. The patient dreamed she was in a large house. When she entered the living-room, which was very large, she saw a group of people sitting before a fireplace. One was standing, a man, an intimate friend. For a moment she debated with herself as to whether she should show her real feelings or repress them because of the others present. She decided to act as she felt. She ran up to this man, greeted him joyfully, put her arms around his neck and kissed him. At this point she perceived the shocked look on the faces of the others, but she did not care. As he also did not appear to care, she took him by the hand and ran with him into the different rooms, all over the house. Then she awoke.

When the patient started to tell this dream, she hesitated. She finally said she would tell part. In the end she told all. The portion she intended to leave out concerned the kissing. The man was an old and most intimate friend. It grieved her because he had failed to inquire how she was, though he must have known about the operation. The day following the *patient called out* gleefully, "Do you wonder I wanted to hug him?" and showed a fat letter she had just received from the man of her dream. In this dream we see for the first time an excellent opportunity for the fourth law of dream formation to manifest itself, that is, the law of secondary elaboration. According to this law the dream itself is never so rational or consistent as it appears to be on recalling it. The dream is elaborated and rationalized in becoming sufficiently conscious to tell. One can never be sure how much of the final form of the dream is thus due to this factor. The first two dreams of the patient were severely simple. It seems highly improbable that there might be much elaboration in relating them. From the third dream on, however, the dreams are all so rich in material and so complex in form and significance that they give excellent opportunity for secondary elaboration.

Here we have a dream, furthermore, the hesitation in telling of which manifests a consciousness of the tendency to repression. The significance of the dream, as showing her affection and desire for the man, was not fully realized, although it certainly was partly felt. As the patient was not under obligation to endure psychanalysis no questions were asked. There is, of course, probably much more symbolical significance to this dream and to the dreams following than we can elucidate here. For any who may be interested in carrying further an analysis of this type the Freudian literature is recommended, especially Freud's *Traumdeutung*.

The night following the last dream cited the patient dreamed she was in a hole trying to get out. She took hold of a large stone—like a monolith—but it rolled over onto her, pressing her to the ground. It did not hurt her, however, and soon her "friend" (her dream lover) appeared and helped her out. Then she fancied she was on a street where there were a great many public buildings, especially churches.

For the benefit of those who may wish to try their hand at interpretation, the following dreams will be reported although no attempt will be made here to analyze them.

The patient was in a long and narrow room at night. The "friend" of her dream was there. She was on an operating-table having her nose examined with an ophthalmoscope. She could hear the doctors talking about her, but could not understand what they said. She was quite puzzled at their using an ophthalmoscope on her nose. She tried hard in the dream to find out what they were after. There were many doctors about and she could see them very distinctly. They all appeared to be quite unusual and peculiar in many respects. One in particular wore a very short beard. He looked extremely funny. The doctor had dark eyes, with quite conspicuous pupils, that is, the pupils were very large. The patient found these eyes interesting. At first she felt somewhat suspicious, but later they gradually gave her a sense of confidence. The nose was rather small, the features regular; she does not recollect the clothes. The first thing that the patient noted was the beard, then the eyes were seen, and finally the man as a whole.

The next night the patient dreamed she was coming from a room at the end of the hall. Near the stairway she met one of her college instructors. He presented her with some tea-leaves and asked her to make some tea. She descended some stairs, a long flight with winding railing. She saw the paper on the wall, the white treads, the mirror, and an old fashioned camphor chest, mahogany chairs, etc., exceedingly distinctly. Then she passed through her *father's private* office, seeing its details very clearly. On reaching the dining-room she found things rather muddled. It seems she could not accomplish anything. She endeavored to gather things together to make tea, but as fast as some were collected others disappeared. She saw a great accumulation of fancy and odd cakes. Some in particular were especially distinct. There were "platters and platters of things to eat."

In another dream the patient needed some sort of an operation on her ears. The operator was a man to whom *she had been going for years* for her ears. It was icy outside. She met a person whom she did not know, at first, though he looked familiar. She finally recognized him as a man her physician had taken into her room the day before. On the way to the office she went to her grandmother's house. Here she entered a brick-paved entrance hall different from anything she had ever seen before. Then she journeyed to the doctor's office. There were so many people waiting that they had *to enter the inner office* in groups. The patient was especially interested in one man with a child. "He had a rather sweetish type of face," she said, "and was tall and fair." The child was 3 or 4 years old. The man first spoke English, but fearing to be overheard he later conversed in German. She was much interested in him. Finally she entered the inner office, but the doctor was not there, and his son treated her instead.

After acknowledging that she had had a terrible recurrent dream, *previous to the operation, which had stopped* with the tumor extirpation, the patient could not be induced to tell its nature. She said it did not concern visual images, however. With this she asked to be excused from further questioning. The study necessarily stopped here.

One of the most interesting points relating to this series is the increasing complexity of the dreams as they appeared. It seems as if the dreams were being utilized for ever more and more significant symbolization. Simple gratitude and a desire to go home characterized the first dream, while love and marriage are symbolized in the later ones. It is interesting to note how dreams and visual imagination are probably in the service of the desires. Unfulfilled wishes of the day are satisfied at night by symbolic creations. The restoration of the visualizing capacity simply affords the person another method of presenting to herself her various wants.

It seems as though there must be some significance in the order of the dreams. First gratitude for her life appears, then a child, next a lover and then churches picture themselves in her dream-life consciousness. Is this not also the order of her real desires?

The problem of where the memory of the "lover" was before he appeared in the dream is very interesting. That the material, so to speak, was there for use in visualizing him, is proved by the fact that he had not been seen for some little time before the operation and not at all since. The image of the dream, therefore, must have been created out of material already present. Previous to the removal of the tumor, however, this material was not available either for dreams or visual imagination. Visualizing, perhaps, was actually done, at moments, but it was not sufficiently connected with the other thought processes constituting the ego-consciousness and so it was not remembered. Thus there apparently was some kind of dissociation between particular visual images and other images.

Regarding a possible physiologic explanation of this psychologic change in mental imagery we have little to suggest that is satisfactory. We know that functions of the various parts of the brain may be held in temporary abeyance, so to speak, by pressure—the so-called increased intracranial tension as well as the immediate neighborhood relationships. Following tumor enucleation, abscess drainage, and palliative decompressive procedures we are wont to expect amelioration of not only the headache, vomiting and lethargy, but also of the changes in memory, in attention, in emotions, and so on. What is more, we know now that the finer objective findings may alter rapidly in much the same manner. In cerebellopontine growths, for example—endotheliomas which may have no immediate connection with the cerebellum itself—where equilibrium and general muscle coordination are much disturbed, we are aware that often these symptoms may rapidly diminish in intensity following successful extirpations. A further demonstration is offered by the interesting charts which Dr. Cushing and Dr. Walker are gathering in a detailed study of the visual fields before and after cerebral operations. These show surprising enlargements of the form and color fields and increases in visual acuity, some changes even within twenty-four hours.

The rapid reappearance of visual imagery, then, as noted in this case, has clear-cut analogies in other aspects of cerebral pathologic physiology. Just why there should have been a selection for visual imagery alone, however, is not so clear. Auditory and motor images apparently showed no changes in intensity before and after the surgical treatment.

Starr thinks that the visions of delirium are probably produced by irritation of the visual area of the cortex. Irritation, we know, of the occipital cortex can produce forced revivals in consciousness of visual memories which may consist of actual images. More or less extensive lesions in the occipital cortex, on the other hand, are attended by losses of visual memories. While the endothelioma here occupied a parietal lobe site, it is conceivable that either neighborhood pressure or general tension factors may have inhibited, temporarily, this occipital lobe function.

We wish to express our gratitude to Professor Cushing for permission to investigate and publish a report of this case.

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HYPERTHYROIDOSIS OF INTESTINAL ORIGIN

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The pathogenesis and disarrangement of the internal secretions and defective coordination between these secretions and the nervous system which constitute hyperthyroidism or, when they are in an extreme state, Basedow's disease, are still veiled in obscurity. Whatever the internal disarrangement of a chemical or neurogenic nature may be, it constitutes, for the present, one of the mysterious problems of pharmacology, as well as of physiology and pathology.

When Basedow first published the symptom-complex in 1840, which has since retained his name, he described three classical signs as characteristic of this condition: first, exophthalmos; second, enlargement of the thyroid, and third, tachycardia. At present we could probably safely add two more frequent conditions. These are muscular tremors and disturbances of the gastro-intestinal tract, particularly diarrhea. The diarrhea has since then always been regarded as a consequence of Basedow's disease and I fail to notice in literature that anyone has reported diarrhea, or more precisely, any anatomic change in the gastro-intestinal tract as preceding the classical symptoms of Basedow. Robert James Graves, who worked over the studies of Basedow and confirmed them, nowhere states that a typical Basedow may follow years of gastro-enteric abnormalities. We have as yet no exact physiologic, pharmacologic or pathologic test for the existence of Basedow's disease in its incipiency—conditions which are more properly called "thyreoses"; when there is excessive function of the thyroid, the condition is called hyperthyreosis; when diminished, hypothyreosis. I should suggest a third idea where the thyroid secretion is not quantitatively diminished nor increased, but chemically altered into a secretion containing different chemical substances from the normal. I designate this as *dysthyreosis*. No one denies the facility of the diagnosis when the classical symptoms are pronounced, but usually when such a state of the various organs exists, there are already extensive pathologic changes in most of the internal organs.

In the present state of our knowledge we have principally two views which, though indefinite, might be stated as attempts to explain the internal disarrangement of the secretion of ductless glands and the disturbed reciprocal coordination of nerve-cells with these internal secretions. One is the view held by Moebius that the thyroid is at the bottom of the entire trouble. The other is not definitely associated with any clinician's name, but it is a view which maintains that the thyroid is only secondarily involved and that some other nervous or chemic deviation from the normal has preceded the thyroid abnormality. That pronounced cases of hyperthyreosis, even with exophthalmos and slight enlargement of the thyroid and tachycardia, have been observed where surgical removal of parts of the thyroid could reveal nothing abnormal in the gland itself, is suggestive of the possibility that the thyroid may be secondarily affected.

In a recent article[1] von Noorden describes remote symptoms of a nervous and muscular derangement consequent on intestinal disturbances and even goes so far as to suggest that his associate (Eppinger) has isolated a bacillus from the intestinal contents of such sufferers which is suspected of being the cause of the whole difficulty.

McCarrison's results are mentioned in THE JOURNAL[2] as follows:

> Having shown in the course of his researches on the etiology of endemic goiter that the infecting agent of this disease exists in the intestinal tract and that a plentiful amebic infection was present in this situation in the vast majority of all cases of goiter in Gilgit [India], McCarrison has been engaged in endeavoring to cultivate amebas from the feces of sufferers from this disease. During the course of this work he was struck with the constant character of the bacillary growths which appeared in the medium employed. This medium was the one recommended by Musgrave for the cultivation of amebas. The vaccine employed was, therefore, a composite one and contained organisms capable of growth on an alkaline and feebly nitrogenous medium. This vaccine was administered in selected cases in doses of from 150,000,000 to 350,000,000; the inoculations were made at intervals of from seven to ten days. The results obtained were most gratifying.

Recently Sasaki produced enlargement of the thyroid by feeding normal rats with feces of other normal rats, and he also produced thyroid enlargement by the subcutaneous injection of rat feces. These experiments are quoted from Julius Bauer.[3]

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[1] Von Noorden, Carl: Intoxication Proceeding from the Intestines, Especially Polyneuritis, THE JOURNAL A. M. A., Jan. 11, 1913, p. 101.

[2] McCarrison's Researches on Goiter, editorial, THE JOURNAL A. M. A., Aug. 10, 1912, p. 449.

We may interpret these quotations that intestinal abnormalities, though long recognized as a consequence of hyperthyroidism, may also be a cause, even if we limit ourselves to the conception that a live microbic agent is necessary to bring about this effect.

I wish to report three cases in which a chronic colitis of ten, eighteen and twenty years' standing had preceded the symptoms of hyperthyroidism. Two of these patients had been in Carlsbad for the relief of their colitis and one had been operated on, a partial thyroidectomy having been performed with only very transient relief of the symptoms. Naturally it would be desirable if we could find a method of determining when and how a colitis or enteritis is the cause and when it is the result of hyperthyroidism. Unfortunately, we are still lacking biologic and chemical tests for ascertaining the relation of these two states. I had personally hoped for such a test from the research of Dr. Reid Hunt, working in the Department of Pharmacology of the United States Public Health Department, but Dr. Hunt's acetonitril reaction has not proven of diagnostic help. I quote his own words from a letter to me:

> I do not think that the acetonitril reaction has at present any value for purposes of diagnosis; it does not seem to be constantly obtained even in marked cases of hyperthyroidism. I hope, however, it contains the germ of a method which may be developed into one of use.

Perhaps as important a conclusion as any can be deduced from the fact that treatment directed to the *intestine is more efficacious than treatment by thyroidin,* antithyroidin, or by Beebe's antithyroid serum, and in these specific cases even more effective than operation on the thyroid. When the original causative process is in the intestine, particularly in the colon, there is no treatment like lavage of the colon with irrigations of 1 per cent. solutions of ichthyol. As much as 1 liter may be used in persons having a large colon and half a liter in persons with a small colon. I have also found that the *Bacillus bulgaricus* in pure liquid cultures administered for a long time reduces the tremor, as well as the headaches and insomnia.

I hope to furnish a more complete report when the cases which I still have under observation are more carefully studied. Treatments of various kinds had been administered in all three of my cases. One patient had gone through a rest-cure of ten weeks with electric, dietetic and medicinal applications. Another had been in a sanatorium for two months and had taken bromid of quinin and ergot for six weeks, with varying effects. Both of these had taken antithyroidin, but never were free from headaches, insomnia, tremors and tachycardia except when at perfect rest. Whenever they resumed their duties their symptoms returned. I kept them in bed three weeks, also, but on a meat free diet and colon irrigation and symptoms gradually abated. One patient at the date of this writing has been free from headaches, tremors, and insomnia for six months, though at times he still experiences tachycardia if he exerts himself in warm weather. A second patient has had no tachycardia that she knows of for a year, sleeps well and appears normal, excepting an occasional attack of diarrhea, which has been traceable to errors of diet. The third patient is still under observation, but is progressing so satisfactorily that, although he is a busy physician, he has had only one attack of tachycardia in nine months while attending to his professional and scientific work.

		Average Pulse
Case 1.	Before treatment	120
	Last six months............	78
Case 2.	Before treatment	106
	After one year.............	80
Case 3.	Before treatment	100
	Last four months...........	74

I still advise continuance of cool needle-spray douches, strict diet, twelve hours' rest a day and one colon irrigation every six to ten days in these patients. One patient, however, has not resumed irrigation of the colon for five months and has remained sufficiently well to attend to his work. When we remember how unpromising purely internal and physical treatment of the thyreoses has been, these results of this special therapy are sufficiently favorable to warrant a continuance of it in the special types of thyreoses in which it appears indicated.

Further studies will be made to throw light on the ideas held by McCarrison, von Noorden and Sasaki, namely, to determine whether a specific microbic inhabitant of the colon is either directly or indirectly the cause of this special type of thyreoses. The chemical and bacteriologic character in all of the evacuations of these cases—I mean the study of the feces—will be reported in a future communication. But I may premise my future report by stating that no specific bacterium or protozoon has been discovered by us that enabled us to reproduce successfully the Basedowoid symptoms and signs experimentally on animals.

Read and Charles Streets.

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[3] Bauer, Julius: Fortschritte in der Klinik der Schilddrüsenerkrankungen, Med. Klin., 1913, No. 5, p. 146.

EFFICIENCY IN NURSING *

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This title is intended to describe the much-neglected field of the economic side of ward nursing, especially in the larger hospitals. Recent magazines are filled with articles discussing "efficiency" in laying bricks or handling tools, and "get-together" principles are the order of the day, but one looks in vain for any serious discussion of the importance of efficiency in the nurse's routine or any "getting together" between the architect who plans the clothes closets, pantries and other ward accessories and the nurses who have to walk endless miles between them in the course of their routine work. Mr. Taylor has shown us how many unnecessary motions the bricklayer makes—how often he bends his back and moves his arms to lay a single brick. Does any one know how many unnecessary steps the ward nurse takes or how often she bends her back or lifts heavy weights? What we do know is how tired and worn she gets when the service is heavy, and how many hospitals, from various causes, have inadequate nursing service, whereas a little intelligent direction would save enough energy in the aggregate to amount to the services of several additional nurses.

Having for some time had opportunity to observe these problems in several large hospitals, both municipal

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

and privately endowed institutions, I finally began to gather statistics. In stating them I shall purposely omit names, in order to avoid the implication of any personal reflection. As I have been unable to find reference to any such facts elsewhere, they will be given in some detail.

I first tried having the nurses wear pedometers in several hospitals. In one I found that the day nurse walked seven and one-half miles a day, in others an average of five and one-half miles. This, in addition to all the stooping and lifting the nurse has to do, besides carrying heavy weights, involves an excessive expenditure of foot pounds of energy. In one hospital in which the wards are so long that the furthest bed is 120 feet distant from the ward kitchen tables, it was the custom to carry the food trays separately to and from each bed three times a day. When all patients were bedridden, as often happened in the twenty-six beds, it was a matter of simple addition to show that some one, usually a nurse, had to walk two miles per ward each day merely to serve meals! The very heavy wooden trays were found to weigh 8 pounds each, and when loaded with heavy ward crockery and with food and drink each tray weighed 15 pounds. Some one, therefore, in each ward had to haul a considerable weight two miles. An additional consideration was the minor factor of so much parading up and down a ward where quiet should be an essential in the treatment of the very ill. I suggested obtaining wheel trucks adapted to carry a dozen or more trays at a trip. I was met with the objection that "the food would reach the patients cold." At this I was surprised, as such trucks are in use in some places, although many large hospitals are without them, partly, no doubt, because no one ever suggested to the architect that he provide space for them when not in use. Experimentally, therefore, I took a common wheel stretcher, placed eight trays on it and, watch in hand, compared the time of delivery with the serving of a like number of trips individually. The entire time consumed in serving eight patients and returning to the kitchen was only two minutes with the truck and ten minutes without. This disposed of the cold-food theory. The distance traveled was 74 feet as compared with 240 feet. Since that time trucks have been used and the comment which reached me from a ward maid, who in this case assisted in the meal service, was: "Bless the man that invinted thim thrucks—sure the corns is all gone off me hands since." The wooden trays had absurdly high backs, so I had two pounds of wood sawed off from each tray.

The bed screens weighed 31 pounds, and three were required to surround a bed. In accordance with the deep-rooted objection common to many training-school superintendents to accumulating anything in the wards intended to promote the true comfort of the patients, these screens were stacked in the hall when not in use. If a man in the furthest bed had to use a bed-pan, some one had to haul a weight of 93 pounds to and from him and then, of course, carry the bed-pan to and fro, thus walking in all about 480 feet. After some insistence I succeeded in having some of the screens left at the distant end of the ward, where they would be reasonably at hand when needed.

In the books on physiology and therapeutics it is taught that water is a good diuretic and promotes activity of secretions, lessening constipation, and some of the more thoughtful of us advise patients to drink it between meals! How many hospitals have drinking water at hand in the wards? In one hospital I found that a few water-coolers in use in July and August were all stowed away by the nurses for the winter in a storeroom in the attic because the Powers that Be thought that they encumbered the ward and, besides, the poor thirsty patients sometimes spilled a little water on the floor! Of course a thirsty man may call a nurse to bring him a glass of water when she is not too busy, but if she has to walk a block or two to get it, she is not likely to do it very often. To show that this is no exaggeration, I went into a tuberculosis ward where the faucet and the pantry and the patients were all in widely separated localities. Here the tumbler had to be taken to the faucet for disinfection and then replaced on a very remote pantry shelf. I asked a nurse to make believe a patient was thirsty and get him a drink. I followed her around, pacing the distance traveled, and she walked 364 feet. At this institution the trustees finally ordered water-coolers in each ward and an individual tumbler to be kept accessible for each patient. It is noteworthy that such suggestions never come from the training-schools.

There is usually a single table at one end of a long ward to which the nurse periodically carries the bedside note-blanks to be written up several times a day. How many feet of useless tramping would be saved by having a second table in the center or opposite end of the ward! The patients' bedside tables are all placed on the same side of the bed, regardless of the fact that one may have hemiplegia and be unable to reach the table with the unparalyzed arm.

There is a very good municipal lodging-house for tramps in New York City. In most large hospitals the medical wards are precisely like the dormitories of this lodging-house. There is a bed, a small table, and a more or less (usually more) uncomfortable chair for each person; nothing else is kept in the ward or within easy access to make a patient *comfortable* in bed. There are no cranes at the head of the bed for a heavy patient, or a stiff-jointed one to pull himself up by, or for a heavy, fat patient to lift himself easily on to a bed-pan. Inquiry usually shows that if there are any in the hospital "they are over on the surgical side." The nurses (or rather their principals), do not like them because they detract from the symmetry of the ward. There may be a few back-rests, but the best kind, which collapse when not in use and are permanently fixed to the head of the bed, are seldom found. In one hospital I discovered that portable rests were stored in a remote closet so far away that the nurses seldom had time to get them. I insisted on having them hung on hooks behind the beds. When I left the rests did also! Often a convalescent is able to sit up only long enough to eat a meal, which he does in comfort with a back-rest, but what nurse has time at the meal hour to walk a block and bring in a heavy rest to be used only a few minutes and then take it back? How much simpler to set the dinner tray flat on the patient's stomach and let him try to eat lying flat and getting more and more tired from the weight (for not all trays have legs and, when they do, they are usually too short)! If one's appetite is poor, discomfort while eating certainly does not improve it.

How many medical wards have cradles to take the weight of the bed-clothing off from swollen, rheumatic leg-joints? Ask the nurse, who says she "has heard of one in the building but it must be over on the surgical side." Her rule is to strap the bed-clothes so tight over the feet that they cannot slip, and the patient, in consequence, enjoys a more or less painful talipes equinovalgus. I produced a decided sensation in one hospital. A 300-pound woman with nephritis, incontinence, bedsores and high tension came into my wards. When lying on her back she was 28 inches across at the hips and she lay on a 32-inch-wide bed. She could not turn without landing on the floor. She needed to be turned for enemas, to have her sores dressed, and to be cleaned after incontinence. She needed hot packs. In this hospital of 1,000 beds there was not *one* for an unusually obese patient or an unusually tall one. I sent in a requisition for a 48-inch bed. A hurry call went to a department store, and the bed arrived, but was so low that the nurses were breaking their own backs in trying to relieve the patient. So we propped it up on shock blocks and the patient was finally able to turn herself without risk of breaking her bones by landing on the floor. This apparently simple innovation was regarded as so remarkable that nurses came from neighboring wards to see it!

Such an arrangement as a foot-rest to keep a patient from slipping to the foot of the bed, or to brace against while sitting in bed, is so serious a departure from training-school routine orders as to the "looks" of the bed, that, although I have ventured to hint of it, I have lacked the moral courage to insist on it!

There are many patients who cannot use bed-pans with satisfactory results. The very obese, for example, cannot. Yet very few wards are supplied with the convenient portable commodes which are mounted on casters, and when they are I find the nurses, for some reason, very reluctant to use them, although their use requires no more work and no more screens than that of bed-pans.

There are many patients who are old, feeble, or mentally dull, or mildly delirious, who in turning in the narrow hospital bed may land on the floor, unless protected. All they need is a couple of boards at the sides of the bed, fastened by tying them through holes bored in the ends. But the nurses find it easier to fasten draw-sheets over them. This method restricts freedom of motion and irritates, and I have occasionally seen a victim so tightly fastened by a sheet drawn across the chest as to have serious impairment of breathing. I do not, of course, refer to the actively delirious who attempt to get out of bed unless restrained.

All these appliances require a little thought for their use, and my experience is that unless they are kept within convenient reach they are never used, yet they add enormously to the comfort and welfare of the patient in bed. The architect usually has never thought of them and makes no provision for space in which to keep them when not in use.

There are many other details concerning efficiency, as, for instance, lack of system in the method of distributing the various things for the morning toilet, distributing medicines, etc. There should be more ward tables than are generally found. They save many steps and promote efficiency of service. The visitor has nowhere temporarily to lay a hat or heavy coat, unless he puts it on the patient's bed or on the floor. Convalescent patients need access to a table on which to lay a book or a checkerboard, if they are ever permitted anything to divert their minds from their own or their neighbor's ailments.

I do not think these suggestions unreasonable, nor do these appliances for the comfort of patients necessarily detract from the appearance of neatness of a ward, yet the modern training-school attitude is so increasingly pedagogic and so decreasingly humanitarian that I am unable to recall a single suggestion originating with the officers of a school designed to promote the comfort of patients in bed, and I know of more than one school in which nurses are reprimanded for following their natural impulse to favor the individual. I have sometimes doubled a pillow temporarily to ease the position of a dyspneic patient, the nurse telling me she did not dare to do it herself. I admit that in general the window-shades should be kept on the same level, but if a patient has conjunctivitis, photophobia and a severe headache from facing a glare of light, and the nurse dares to pull down the shade opposite, she is liable to severe reprimand. Yet in private practice, if she refused to regard the comfort of the patient in such matters, she would quickly be superseded. Lectures on bacteriology, urinalysis, voice culture and the functions of the ductless glands loom large in the up-to-date training-school curriculum, but the gentle art of making the ward patient *comfortable* in bed, is not only unpracticed but actively discouraged in many instances.

To return to the problems of nursing efficiency. Physicians themselves are often lacking in its consideration. On "rounds" nurses are kept waiting while learned bedside discussions are held over polymorphonucleosis or complement deviations, when the service is heavy, and they ought to be serving a glass of water or easing an aching limb. The doctor's routine often calls for the recording of pulse, temperature and respiration data every three hours of every patient in the ward, although perhaps not half of them require it more than two or three times a day, and some few may not require it at all. This is notably the case on the surgical side. Now *three minutes per patient to take these observations*, including disinfection of thermometers and writing down the three records, is a minimum time allowance if any approach to accuracy is to be expected. In a ward of twenty-five patients, four observations a day at three minutes each, requires 300 minutes or five hours. But no nurse spends this time over such work and it would require her to neglect urgent matters if she did. Is it not better to order fewer records and have them reasonably accurate?

One great difficulty in relation to the doctor's efficiency arises from the almost purely American custom of rotating services. Whatever may be the merits of this question, which cannot be discussed in this paper, every service should have its administrative director, that is, one physician or surgeon who is continuously responsible for securing uniformity and continuity in the matters under discussion. If back-rests and cranes and drinking-water and bedside boards and tables and food-trucks and commodes and foot-rests and leg-cradles and similar appliances are admittedly useful adjuncts to treatment and comfort of patients, they should not be brought into requisition for two or three months while Dr. Jones is on duty and then hustled into oblivion the moment Dr. Smith succeeds him, who is not regarded by the school authorities as a simple-minded crank, always trying to make patients comfortable instead of giving them an excess of pills and potions.

I have heard certain extremists among those seeking to regulate the training of nurses advocate an eight-hour system of ward work, although I have heard no definite statements as to where the additional funds were to come from, which such a system would entail, or how the additional housing required could be obtained. Nor have I heard any facts presented as to the health of women as affected by their hospital course of training. Such facts, indeed, I find are not easily obtainable from training-school records. In one large hospital, however, where the work is so arduous that the health statistics of the nurses may be regarded as showing the extreme to which their energies may be taxed, I obtained the following data:

Total number of nurses in the school—119.
(All of these nurses were ill for at least one day.)
Total number of working days in 1912—41,650.
Total days of illness—583.
Percentage of days of illness—1.5.

Among the illnesses were eight cases of scarlet fever, seven of diphtheria, three of measles, one of typhoid fever and three of German measles, which collectively account for 433 days of the 583. As these infections were not, strictly speaking, due to overwork, it is fair to deduct the nineteen nurses having acute infections from the total of 119. This leaves 100 nurses with only 150 days of illness, or an average of 1.5 days of illness per nurse for the entire year. It thus appears that the average is extremely low, and compares very favorably with similar statistics of any large group of young working women, as, for example, factory employees, although the working hours of the nurse were between ten and twelve, as compared with the eight or nine of the factory employee.

In conclusion, I would make an earnest plea for the study of greater efficiency in nursing in order to conserve the nursing force which we have in any hospital, and for the greater use of common-sense appliances for promoting the comfort of patients in bed.

If the nursing system of to-day is being overweighted with theory and pedagogy to the detriment of more legitimate practical and humanitarian aims, which unquestionably is true, physicians have no one to blame for it but themselves, through their lack of cooperation and increasing tendency to permit training-schools to be managed by extraneous influences, manipulate their own curriculums and arrogate the responsibilities which are primarily the function of the doctor.

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THE TRAINED NURSE OF THE FUTURE *

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With the ever-extending specialization of modern society, certain social groups take on the character of human commodities. They do not produce, but they conserve values. To these groups, the profession of nursing women belongs.

These human commodities are created, in the course of social development, by the need for personal service as between man and man and by the demand that this personal service, in degree of the exigency of human need, shall be of expert quality. Some particular agency of social service is frequently employed for the immediate supply of such expert assistance. In the case of the trained nurse, the hospital has served as her creative agent. Not unnaturally, the agent of creation becomes or attempts to become the maker and the molder of the thing created; and not infrequently it comes to regard the creature it has incubated as its own particular perquisite, and designed specifically for its own use. This proprietary relation, the hospital, as the foster-mother of nurses, with the exercise of something of the maternal instinct and with more of the exercise of the instinct of self-perpetuation, has endeavored to assume.

But somehow or other in the unfolding of the biologic plan, the human creature tends to get away from his creator, to say nothing of his inevitable assertion of his independence of the parental agent of his creation. And what is true, as a matter of biologic development of the individual, is true of the group. No social condition of the group can be ultimately fixed, no economic principle of its service can be permanently established, in the fixation or the determination of which the welfare of the group and of all the parties in interest in the life of the group has not been fully and fairly considered.

In the segregation of this group of human commodities which constitutes the profession of nursing, there are four parties in interest: first, the public that it serves; second, the hospital system that it serves; third, the medical profession whose essential handmaid it is, and fourth, the group of nursing women itself. Since the greater includes the less, it would seem that the problem might be reduced to simpler terms; to two factors, indeed, society and the nurse. But in a society so highly specialized as our own, interrelational group interests arise and, therefore, in the present instance, it is essentially a four-factored equation with which we are forced to deal. Perhaps no other group of human commodities has to sustain so many relationships in its service as does that of the trained nurse. At the present juncture, each one of these relational factors is seeking to exercise a dominant influence in the development of this human commodity group. Social welfare societies, hospital associations, medical associations and nurses' federations are all busy with the question of the graduate nurse.

So vital and yet so unseen is the force of the social movements which express themselves from time to time in what we term public sentiment, that they are hard, indeed, to reckon with. In America, public sentiment is a force which finds expression slowly. It has taken the public a long time to learn the values of the trained nurse as a social commodity, as the agent of an important social service; a tardiness to be traced to the fact that nursing is only a differentiation of domestic duty. But there are many evidences that the public is beginning, not only to appreciate, but to utilize, in many different directions, the services of the nursing profession, and that this type of human commodity is a definite answer to a very definite social demand.

The most actively dominant of all the parties in interest in the development of this social group has been the modern hospital, and hitherto there has been adequate reason for its influence. It has been the sole agent of the production of the trained nurse; it has created and controlled the opportunities of training. The product of its early efforts represented new and real social values, as contrasted with the nurse of earlier days who, like Topsy, was a social orphan and "just growed."

The profession of medicine, which has been simply the co-employee, with the nursing group, of the hospital of the past, has exercised but an advisory influence over the birth and training of the nurse. It has been the habitual critic of her development, and very pertinently so, because the physician is ultimately the only competent judge of the fitness of the nurse and the chief sufferer, held responsible to her employer, the patient, for her

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

possible unfitness. Yet as a purveyor, only, of the nursing product of the hospitals he has had to take, and often to train anew, just what he could get at their hands.

Up to a very recent day this human commodity, herself a social unit, not forming until lately into a definite social group, has been the most helpless and, often, in the measure of her own unfitness, the most hopeless factor in the evolution of her own class. Invited into a newly made calling, poorly prepared for her responsible undertaking, often imperfectly trained in its essential duties, hurriedly pushed out into an alien world; a half-baked social product, thrust into the fulfilment of an uncertain social need, it is small wonder that she has had a hard time finding herself. The instinct of the eternal feminine for sacrificial service has been her sole saving grace, the guiding light of her star of undoubted destiny, leading her on to the realization of her important social function.

Suddenly, as human progress goes, this group of human commodities to which she belongs finds itself in large, active and growing social demand, and with the growth of that demand, the relation of the several parties in interest, in the process of the development of the graduate nurse, has undergone a radical change.

Primarily created in answer to the demands for hospital nursing, the service of the graduate nurse has extended readily to the private homes of the well-to-do; but of late it has gone far beyond this limited range of usefulness. Trained nursing has come to be regarded as a utility which should be secured for the uses of all classes of the people. Its field is widening out beyond the lines of a purely personal service into the broader range of social service in many and varied forms.

To-day trained nurses are in the offices of physicians, assisting in the care and ministering to the comfort of temporary patients and in the conduct of private laboratories. They are becoming the professional aids of the doctor in his daily duties.

Trained nurses are in the public schools, and rapidly the system of health inspection is extending from larger to smaller communities. Here, as in the doctors' offices, graduate nurses serve as the immediate assistants of medical officers; they reach the homes of the children, become the sanitary advisers of their parents and are definitely engaged in bringing the principles of preventive medicine within reach of the practice of the people. In private schools and colleges and in state universities, they are appointed as residents in charge of the health and ill health of women students.

Trained nurses are employed in the great service agencies of relief in the large cities of the country. The badge of the visiting nurse, devoting herself to the sick and the suffering in the homes of the poor, is no less a mark of honor because it is coming to be a common one.

Trained nurses are becoming the effective agents of the constructive work of great philanthropic enterprises concerned with the problems of child-welfare, the prevention of infant mortality, the study of mental hygiene and the control of tuberculosis. They are employed in the hospital service of the army and navy and in the Red Cross Society throughout the world.

They are going far into the field of missions, both at home and abroad, and are ably supporting the efforts of medical missionaries.

They are enlisting in the welfare work in great department stores and manufactories, where an enlightened management finds an economic asset in the health and happiness of its employees.

Trained nurses are at work in the free clinics of city *dispensaries* and are doing valuable duty in the social service departments of the great hospitals.

Everywhere they are the effective agents of scientific medicine; they are putting principles into practice and are filling in the great gap between the laboratories of the schools and the common life of the people.

With this widening out of its field of private and public usefulness, with the opening up of its opportunities of social service, it is inevitable that the profession of nursing should have awakened to a strong sense of class or group *consciousness—that it should* be seeking eagerly to come into its own, as the determinant of its own welfare, the exponent of its own needs, the arbiter of its own relations to the hospital, to the profession of medicine and to the public it serves.

The development of this class-consciousness is distinctly shown at four points of social movement:

1. In the demand for legislation creating state boards of examiners to regulate the practice and to legalize the practitioners of nursing. While here, as in the profession of medicine, this demand begins with a desire for protection on the part of the profession itself, such laws, in their operation, are an exercise of the police-power of the state for the protection of the people from the incompetent. They may be taken as an acknowledgment of the relation of the nurse as a social servant in the state, whose capacity to serve, in a calling which involves the health and the life of its citizens, should be attested by the license of the commonwealth.

2. In the movement, inspired by educational leaders of the professions of nursing, toward the standardization of the education of nurses in America. This movement, to be undertaken by the Carnegie Foundation for the Advancement of Teaching, contemplates the study of conditions in six or more states of the Union, for the purpose of reaching some consensus of judgment in the matter of entrance requirements, preliminary training, duration and character of courses, etc. If the Foundation shall accomplish for the profession of nursing, in any substantial measure, what it has achieved for medical education in this direction, it will do society at large a notable service.

3. In the recent rise of university schools for nurses. The University of Minnesota is the pioneer of this significant movement for the better education of nursing-women. In creating a school for nurses as a department of teaching, under direct university control, in charge of the faculty of the medical school and affiliated with the teaching hospital, which is similarly owned and controlled by the university, it has led the entire world, although it has been happily followed, already, by two neighboring state universities. The significance of this movement lies not alone in the high standard of training which the university has set, but in the fact that its action tends to remove from the exclusive control of the hospital, as such, the education of the nurse. Its significance can be measured only by those who have studied the problem of the education of nursing-women from the point of view of the interest of the student in training, apart from the interest of the training hospital. The guarantee which the university gives that the student's educational interest shall be paramount and that the pupil-nurse shall not be exploited for the benefit of the hospital service sounds the note of an emancipation which could not be effected, perhaps, by any other agency.

The essential features of the university curriculum for nurses may be of some interest. The diploma of a high school of the first grade and an actual examination to determine the physical fitness of the candidate, conducted by the physician of the school, are requirements for admission. Preference is given to women of superior attainments. A preliminary course of four months is required, during which the pupil is not in hospital residence, for which course she pays a tuition fee, and which covers instruction for from six to eight hours daily, conducted in the laboratories and lecture-halls of the university, in the subjects of anatomy, physiology, bacteriology, chemistry, materia medica, English, penmanship and lettering, physical culture, hospital economics and practical dietetics—a course with which the student is exclusively occupied during the four months, thus relieving the period of subsequent hospital service of many wearying hours of evening lectures. The superior fitness of the hospital entrant for her practical duties, by virtue of her preliminary course of study, has proved itself clearly to those who are in immediate charge of the school. A two months' probation service in hospital, followed by two and one-half years of graded service and study in the wards of the hospital and the outpatient clinics, complete the course. An eight-hour hospital day and the employment of an adequate number of graduate nurses as long as may prove necessary for the proper conduct of the school are added features of the university plan. On recommendation of the medical faculty the university degree of Graduate in Nursing is conferred by the Board of Regents.

4. In the recognition that the time has come when the gauge of fitness to teach and to train students in nursing must be applied to the hospitals. A demand for the educational standardization of hospitals is making itself felt.

In the past twenty-five years the number of hospitals engaged in the business of making nurses, in the interest, primarily, of the hospital's own economic salvation, has increased to the point of real educational danger. A scarcity of matriculants, low standards of admission, overworked pupil-nurses, a deteriorated and inadequately trained output, a surplusage of graduate nurses in private practice in many communities, and a lessening of earning power in consequence of this overproduction are the inevitable results.

The scarcity of nurses, of which so much has been heard in recent years, is a matter of real famine in the quasipublic and private hospitals, which, under denominational or individual control, have been unduly multiplied. It is not a matter of famine of trained nurses in private practice. If there is any scarcity of nurses beyond the graduating lines of the hospital, it is in the higher vocations to which the practice of nursing leads. These hospitals which, like the overnumerous denominational churches of most communities, are rarely filled, maintain training-schools for nurses as a necessary condition of their own support, divide and subdivide the educational field to its serious detriment, and care for their patients at the cost of the labor of their pupils. Their precarious fortunes are, in no small part, dependent on their attracting student nurses. Even at that, these quasipublic and seldom free hospitals fall back continually, under the plea of a charitable function which they do not fulfil, on subscriptive support to make up their annual deficits. Were these hospitals compelled to employ graduate nurses and to abandon their training-schools, some of them would speedily close their doors. Undoubtedly, those which could survive would eventually be better served.

The results of this uneconomic multiplication of hospitals and, along with them, of training-schools for nurses, are seriously felt in many of the larger institutions, which are compelled to supplement their force of pupil-nurses by the employment of graduate nurses, for which the private patient has to pay as much as he would for similar service in the home. Many of the best nurses now prefer hospital practice to private employment and naturally cultivate these opportunities.

The practice, in itself, suggests a remedy for the present educational misfortunes of the training-schools. The smaller private or special hospitals with less than an average daily complement of thirty patients (not beds) should be debarred, by law, from the maintenance of training-schools, for which their service is inadequate. The conduct of standardized training-schools should be confined to general hospitals of standard capacity and equipment. Substandard schools in special hospitals should be forbidden the graduation of nurses, but should be affiliated with standardized general hospitals, which should receive and credit their matriculants with equivalences of time and service and should graduate them when their full complement of training is secured. Direct affiliation with or ownership by recognized medical schools should be a prerequisite in standardizing the teaching hospital. The schools for nurses should be under the direction of the medical faculty or should have a special faculty affiliated with the medical school, on which a number of medical educators should sit. Since the day is coming when all medical schools will be university schools, it will naturally follow, if this relationship is established, that eventually the schools for nurses in America will also be under university control. Let us speed the day!

No substantial progress can be made in standardizing the education of nurses until the commercial value of the nurse to the hospital is eliminated from the question. That it will be eliminated and that progress will be made are assured by that essential fitness of things which ultimately rules the acts of men.

In discussing the trained nurse of the future, it is not necessary to conjure up any visions of a distant day. The consummation of events which are now in progress must lead up to practical results in an immediate to-morrow. There are great and difficult problems before the profession of nursing, but it is going to realize itself in their practical solution. To standardize the hospitals which conduct training-schools; to standardize the teaching of the schools; to standardize their product by effective state regulation of practice—these are large and serious undertakings. They will require the combined wisdom of the leaders of the profession and of their natural allies in the profession of medicine.

To equalize the social availability of the trained nurse is one of the most momentous matters with which the profession of nursing has to concern itself. At present, between that part of the public that can comfortably pay the fair wage of trained nursing and that part of the public which receives or should receive its trained nursing through the medium of organized relief, there are large classes of the people who are altogether unable to meet the expense of such service or who, meeting it, are financially disabled by the drain on their meager resources.

The proposed training and graduation of women of less adequate preparation, to be known as "nursing assistants," etc., and to work for lower wages, is no real solution of this very serious problem.

The plan evolved by a committee of the American Hospital Association and presented by Dr. R. H. Babcock of Detroit is an ingenious attempt to meet the similar college connections. The University of Minnesota has gone a step further and has university education and university control of the training-school of its hospital.

Teachers' College of Columbia University has an endowment of $150,000, established for the department of graduate work for nurses.

For the smaller hospitals with suitable affiliations to insure good general practical training, there has been suggested the possibility of combinations of two or more hospitals to share the expense of securing instructors in the sciences, these teachers to give the same courses in each hospital.

Technical high schools are increasing in number, and courses in fundamental nursing subjects have been established.

A course in dietetics is given in the Springfield (Mass.) technical school. The technical high school of Toronto gives a six months' preparatory course in nursing. For the hospitals that are unable to meet high standards for training nurses there is a field too little developed, that of training attendants. The Special Training-School Committee of the American Hospital Association, which reported at the annual meeting in 1909, recommended that attendants be trained "in hospitals too small to maintain a training-school, in chronic wards of large hospitals, in special hospitals and homes for incurables." There should be, however, no confusion between the trained nurse and the trained attendant.

Physicians and the public should be made to clearly understand the difference in training; otherwise, with attendants failing to meet responsibilities which should only be given to graduate nurses, much harm will be done to the present standing of the nursing profession. No hospital should undertake the training of attendants without an adequate staff of trained nurses to provide good nursing for acute cases and to assume careful oversight and instruction of the pupil attendants.

That the demand for attendants will exceed the supply for a long time to come, I am thoroughly convinced. It is not alone the poor who will be benefited. Many well-to-do people who are suffering from chronic diseases can be well taken care of by those who have been trained in the mechanical work of nursing.

Finally, let us accept the fact that training-schools for nurses should be able to provide adequate theoretical training and practical experience. Let us make this clear to our hospital boards and benefactors, that the necessary money may be spent on our nursing departments.

Massachusetts General Hospital.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HOWLAND, BEARD AND THOMPSON

Dr. P. E. Truesdale, Fall River, Mass.: There are many problems yet to be solved bearing on the education of the nurse. Her proper training and an efficient care of the sick must be accomplished simultaneously and harmoniously. The fact should not be lost sight of, however, that hospitals are founded and should be maintained for the sick. In America, particularly, this attitude is in a large measure responsible for the favorable impression which our hospitals have made on the public. If the education of physicians and nurses is to be made a paramount issue in hospitals, charitable or pauper institutions only will exist.

I wish to ask Dr. Beard what his results have been in the employment of graduate nurses for hospital work. In my somewhat limited experience I have found that the graduate nurses who seek hospital work are of two types; one represents the highest type of nurse; the spirit which prompted her to enter the nursing field was one of unselfish devotion to the afflicted. Her reasons for preferring hospital service are genuine. She makes the ideal nurse and accomplishes vastly more in the hospital. The other type is at the other extreme. She is available most of the time, and will take private work or hospital work as it happens to come. She has her diploma, and now cares only for a salary. It is always a risk to give her responsibilities, and her sense of discipline is a thing of the past. Yet a hospital superintendent who employs graduates only must content himself with a majority of this class and he and his patients should command your sympathy.

Dr. Howland sounded the keynote when he stated that smaller training-schools must meet the requirements by affiliation. It seems to me that Dr. Beard, Dr. Howard, Dr. Howland and other authorities on the education of nurses should indicate the standards of education to approach, and those training-schools which are found wanting should be counseled and reorganized instead of condemned.

Dr. Arthur B. Ancker, St. Paul, Minn.: The City and County Hospital of St. Paul was the first to establish a training-school in this section of the country. We started out with a two-year course, and succeeded in graduating a good many young women who have successfully practiced their profession, several of them obtaining distinction. Furthermore, it has been my observation that some of the most ardent advocates of the three-year course are themselves the possessors of diplomas that they obtained after two years of training. If only because of the advantage that accrues to the hospital, I would advocate the three years' course.

A high school or a university education, as a qualification for admission to the training-school, is desirable, but I do not believe that, primarily, it is the most important consideration. If the candidate have a good home training, industry, and ambition, something less than either of the other qualifications would do.

In the twenty-one years of the City and County Hospital Training-School for Nurses we have had but three deaths, one from typhoid fever, and two from scarlet fever. I cannot remember one of our nurses who, when she had secured her diploma, had to abandon her career because of her physical unfitness.

Miss Louise M. Powell, Minneapolis: I should like to give one experience at the University Hospital to show that high standards can be maintained even though it costs a good deal of money. In the fall of 1912 we had a hospital of 120 beds to open, with fifteen pupil nurses. Instead of throwing down the barriers of our high-school requirement and preliminary course and working our nurses twelve hours, the faculty gave us permission to employ as many graduate nurses at fifty dollars per month as were necessary to carry on the work of the hospital. We employed, for a period of from six to eight months, twenty graduate nurses. I agree with Dr. Truesdale that graduate nurses in the wards are far from satisfactory.

Miss Harriet A. Hartry, Minneapolis: The majority of the criticisms of superintendents of nurses are largely overdrawn. One is the question of orderliness in the hospital. The essayist missed the mark altogether when he said that the training-school superintendent insisted on the shades being straight even though a patient suffering from some unmentionable eye disease would suffer because the shade was not drawn down. That is not the meaning at all. No superintendent of nurses would object to a shade being drawn down, but what she objects to is lack of orderliness.

Dr. Kate Lindsay, Boulder, Colo.: I have been a practicing physician in a sanatorium. I see that the sanatorium nurse is not represented here to-day. While all honor is due to the hospital nurse, in the sanatorium, and especially in a tuberculosis sanatorium, a sanatorium for nervous diseases or a general medical and surgical sanatorium, you will find that if you appoint most of the nurses to treat a case by such physiologic medical treatment as massage, proper bathing, psychologic therapeutics, the use of electricity, dieting, and general management of the patient, she will find herself wanting; at least, that has been my experience. We all have our ideals. We cannot have our standards and our ideals too high.

So far as the nurse's health is concerned I believe that we need to give more instruction to the nurse as to how she can best conserve her own health. Efficiency is the ability to do work and yet not wear one's self out doing it by ordinary methods of work.

Dr. Cleveland H. Shutt, St. Louis: Most of us can tell the nurses what their ideals should be. The community owes something to the nursing profession in showing what it expects to hold out for the nurse after she has completed her training and education to become a nurse.

There is a movement on foot by one of the great independent foundations to investigate the various places from which nurses are graduated in the United States; I will not say trained, because there are many places where nurses are not trained, they simply work. I believe that there will be greater benefit derived by the nursing profession directly, and by the hospitals of the entire country indirectly, from this than from any other movement than has been inaugurated. We have, I dare say, in this country more training-schools for nurses which do not train nurses than there are training-schools that do train them. There are many institutions that specialize, doing only surgical work or only some special sort of work, who give at the end of a certain time a certificate "Trained Nurse." If certain reasonable standards are established and if the facilities which institutions offer for training of the nurse are investigated, tabulated and published, we shall get the right kind of women to apply for training. They will be eager to do so. No one should be more deeply interested in the question of standardizing training-schools for nurses than the nurses themselves. Their own organizations should take that work up because it is, I believe, the most practical movement toward the elevation of the nursing profession and toward giving the women who enter the profession what they deserve in return for their efforts and time spent in training.

Miss Delia O'Connell, Minneapolis: I have sometimes wondered if the scarcity of nurses in our well-equipped training-schools is not due to the fact that these schools insist on three years of unrequited training. I know that there are many women with high-school educations anxious to take up nursing who cannot afford the three years of training without salary. They can learn stenography in six months; they can take up bookkeeping, or they can enter a training-school for two years and three months, after which plenty of work as private nurses is available. They take no second-rate positions. They are good nurses.

Dr. H. B. Howard, Boston: There is one thing that I would like to say: Any training-school will succeed and find its place in the community as long as it is careful in selecting pupils with good dispositions and kindly manners and trains them so that these good points are cultivated and improved. The training-schools do for the nursing profession more, in some respects, than the medical schools do for the physicians that they graduate and throw on our community: they test out as to their physical ability, their ability to endure the work and to maintain an even manner under trying circumstances; in fact, their dispositions are thoroughly tried out. Those that have a bad disposition rarely pass. If a nurse has a diploma or certificate from even our poorest schools, as a rule, you will find she is a woman with a good disposition. I think that there has not been sufficient emphasis placed on this point, and I think that this is the reason why even the poorer schools do seem to fill the bill.

Dr. John A. Hornsby, Chicago: I am more convinced than ever that we are talking at cross-purposes with exactly the same intention. Dr. Beard is perhaps talking about a class of nurses who shall lead and teach in the profession of trained nurses; some of the rest of us are thinking about nurses to take care of patients, at home and in the hospital.

All our training-schools nowadays admit pupils only after they are 21 or 22 years old. Most young women finish their school training at 18; then they either stay at home and take their little fling in society, or learn stenography, or dressmaking, or go into a shop. When the young woman is 22 years old, she decides to become a nurse.

Now I wonder if we cannot compromise with Dr. Beard by taking the girl of 18 when she comes out of school, while her mind is still fresh and flexible and while she still has the habit of application to her books. Why cannot we take her and give her this preliminary course in school without introducing her into the wards of the hospital at all, say for six months or even a year, and then put her in the hospital and give her two years' training?

Dr. Richard O. Beard, Minneapolis: It is not women with university training that we seek; it is simply women with a good average degree of preliminary attainment. Nor are we going to take them at 18 years of age. We have put the age down to 20, and sometimes have been sorry that we have. It is a question of a person fresh from the study of the schools; it is a question of a person with sufficient maturity to know her own mind and to be willing to devote herself seriously to a serious vocation.

We know that it is extremely difficult to put graduate nurses and pupil-nurses together in the same institution; but we have had to do it and we are going to keep on doing it until we can get our school built up to the point at which the pupils of that school can fitly take care of the university hospitals.

I cannot for one moment share any sympathy with the principle that the system of training nurses should, under any circumstances whatsoever, be exploited for the benefit of the hospital or the hospital service. As a matter of fact, there is no inadequacy of supply of private nurses of any kind in most of our communities.

ARTERIOVENOUS ANEURYSM OF THE SUPERFICIAL FEMORAL VESSELS *

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NEW YORK

The specimen pictured herewith is of interest because of the extensive nature of the alterations in both artery and vein up to the bifurcation of the aorta and vena cava, and because of the probable bearing of these lesions on the cardiac condition, on account of which the patient entered the hospital. It is of interest also to note that, in spite of the marked nature of the lesions in the femoral and iliac vessels, no history of symptoms directly referable to them was obtained.

History.—The patient, a physician, aged 63, was admitted to St. Luke's Hospital, Dec. 22, 1912, on the service of Dr. Austin W. Hollis, through whose courtesy I am able to report the clinical history of the case. He complained of shortness of breath and presented symptoms of cardiac insufficiency. There was a history of some dyspnea on exertion, extending over a period of two years, while for the previous two months he had been incapacitated by marked shortness of breath even while lying down and had had some edema of the abdomen, legs and feet. He gave no history of symptoms referable to the genito-urinary, respiratory or gastro-intestinal tracts. His family history was negative. During childhood, the patient had had scarlet fever, and later in life malaria. Luetic infection was denied.

Examination.—This showed a cardiac dulness extending 15 cm. to the left of the sternum, murmurs referable to a mitral insufficiency and an irregular, arrhythmic pulse, averaging 90 to 100 per minute. There was moderate edema of the lower extremities and trunk. The urine was negative, except for a faint trace of albumin in one of several specimens examined. There were numerous moist râles in the lungs and signs of fluid at the right base. Relating to the condition in the left thigh, it was noted that in the left groin was a pulsating, expansile tumor, the size of a hen's egg, situated over the profunda femoral artery. Over this tumor was heard a continuous murmur which possessed a systolic accentuation. The information was obtained that about eighteen years before the patient had been shot through the thigh by a small caliber (probably 0.22) rifle bullet. The amount of disability at the time of injury was not stated, but it was known that since that time the patient had lived in and had traveled extensively through South America and had spent much time on horseback.

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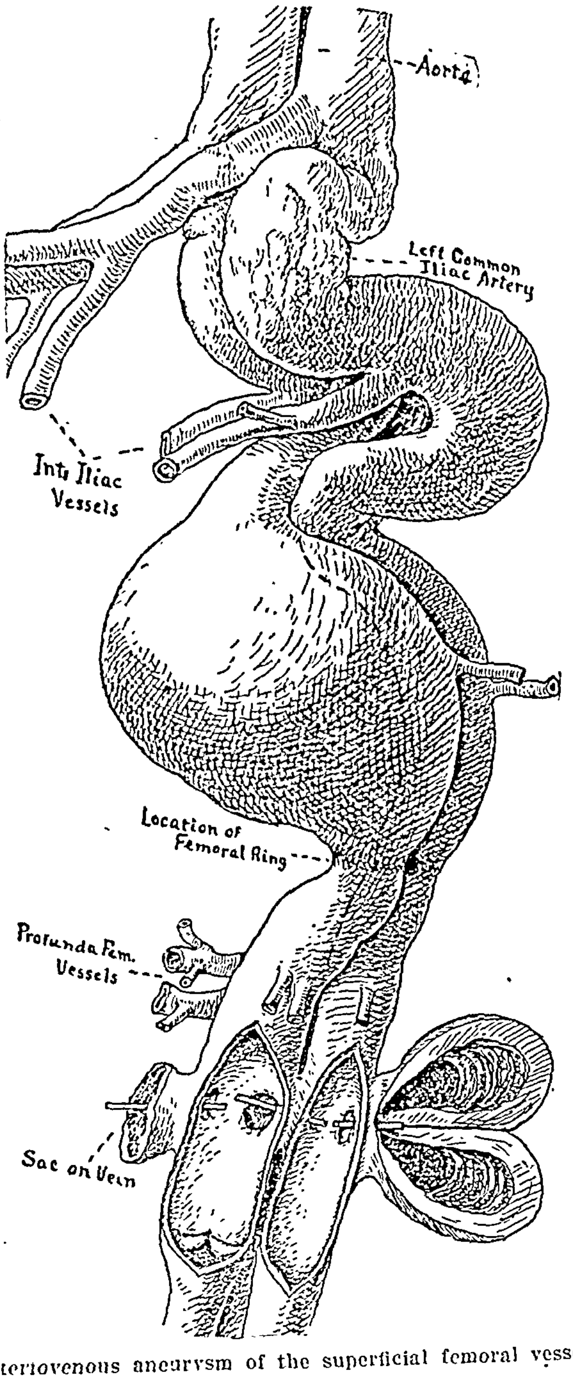
* From the Pathological Department of St. Luke's Hospital, Dr. F. C. Wood, director.



Arteriovenous aneurysm of the superficial femoral vessels.

The meagerness of the details concerning the subsequent course of this lesion makes difficult an explanation of the extensive changes in the external and common iliac artery on that side. The changes in the corresponding veins, however, are explainable on purely mechanical grounds. Obviously, from the rather strenuous nature of the patient's subsequent career, he could not have been greatly incapacitated.

The patient's illness terminated fatally one week after admission.

Necropsy.—A general congestion of all the organs was found. The heart was dilated and hypertrophied. The right ventricular wall measured 0.6 cm. and the left wall 2.2 cm. in thickness. The muscle was pale and flabby. The right auricle was thickened and greatly dilated. The tricuspid orifice was markedly dilated, admitting five fingers readily. The mitral orifice admitted three fingers. The valves in both cases were slightly thickened, but not distorted, and showed no vegetations. The pulmonary valve was normal. The aortic orifice was dilated, the leaflets were considerably sclerosed and atheromatous change at their points of attachment was marked. No vegetations, ulcerations or distortions were present. The arch of the aorta was uniformly dilated and showed areas of rather advanced atheromatous change without ulceration, but around the orifices of the coronary arteries calcareous plaques were found. The coronary arteries were thickened and a moderate degree of atheroma was present. The aorta, from arch to bifurcation, showed irregular areas of early atheromatous change. The right common iliac presented a relatively normal appearance, while on the left side the artery had undergone most pronounced changes.

When the pelvic region was examined, the bladder, sigmoid and upper portion of the rectum were found lifted well out of the pelvis and toward the right side. This was due principally to the immense dilatation of the left external iliac vein and to the dilatation and tortuosity of the corresponding artery. Since the lesion was evidently due in large measure to a retrograde process, it is convenient to begin the description of the specimen at the site of the original injury.

The bullet had perforated the superficial femoral artery and vein where they lie in contact about 6.5 cm. distal to the point at which the profunda femoral vessels are given off. It had gone completely through each vessel, and the points of entrance and exit were situated diametrically opposite each other. The adjoining orifices in artery and vein had become closely and densely adherent to each other, and a smooth-surfaced opening of irregularly rounded outline about 0.7 cm. in diameter persisted. The perforation in the left wall of the artery presented a similar appearance and communicated with an egg-shaped, thick-walled, saccular aneurysm about 4.5 by 4 cm. in its diameters. The sac wall was firmly adherent to the surrounding muscle and fascia. Near the orifice the sac was thin and calcareous, and the cavity contained a recent clot, while the other two-thirds was filled by a dense organized clot.

In removing the specimen, owing to the collapsed condition of the vein, a portion was inadvertently left behind, for leading off from the margin of the perforation of the internal side of the vein and continuous with the wall of the vein was a margin of what was evidently the wall of a sac of a diameter considerably larger than that of the vein. Whether this was a saccular aneurysm of the vein corresponding to the one in the artery can only be conjectured. The opening was 0.6 cm. in diameter, irregular in outline and covered by intima. The inner surface of the margin of the sac wall was likewise smooth. For a distance of 1.5 cm. distal to the point of communication, the artery was dilated and the wall markedly sclerosed and atheromatous; below this point it appeared normal. The vein wall was thickened and dilated for a distance of 3 cm. below the communication, where a pair of well-developed valves was found. Below these valves the vein appeared normal. Above the communication both artery and vein were dilated to about 2.5 cm. in diameter. The arterial wall was sclerosed and atheromatous and contained calcareous plaques. The vein wall was considerably thickened. Both artery and vein diminished in size where the vessels passed beneath Poupart's ligament, assuming an oval outline with diameters of about 2 by 1.5 cm. They both immediately dilated again to their former size and the external and common iliac divisions of the artery maintained a diameter of about 2.5 to 2.8 cm. for the remainder of its course, which was in the form of a double ox-bow and increased the actual length of the vessel to 38 cm., while 15 cm. are given as the average normal length. The wall of the artery showed marked thickening, atheroma and calcification. Except for general sclerosis and marked atheromatous change about its mouth the internal iliac artery appeared normal. About 1 cm. above the femoral opening the vein dilated suddenly to form a fusiform, rather thin-walled sac, 6.5 cm. in diameter by about 7 cm. in length. In a modified degree the vein followed the tortuosity of the artery and the dilatation and thickening of the wall extended into the inferior vena cava, while the right common iliac vein appeared normal.

From the condition of the vena cava, its dilatation and thickening, it is reasonable to suppose that the pressure within it had been increased over a long period of time and the findings in the heart, especially on the right side, may well have been due to the distal arteriovenous communication. With a pelvis so crowded by the enormously dilated vessels it is indeed surprising that the patient gave no history of disturbances of urination or defecation. That the pressure had exerted some effect was evidenced by the fact that both ureters were dilated to about twice their normal size, and that the renal pelves were moderately dilated. Some interference with the lymphatic drainage of the left leg had occurred, for the thigh was edematous and the lymphatics and lymph-nodes in the left groin were considerably enlarged.

St. Luke's Hospital.

A NEW METHOD OF ANASTOMOSING THE OVARIAN TUBE OR VAS DEFERENS

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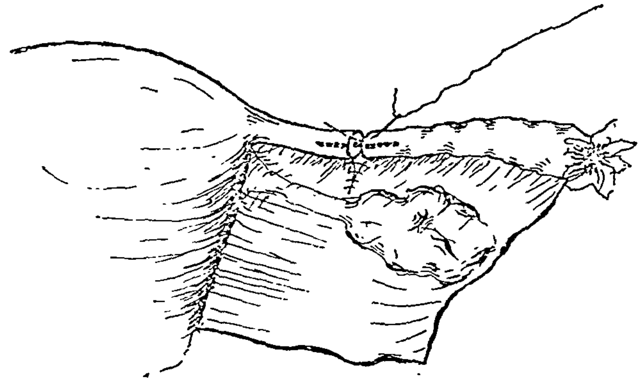
Visiting Surgeons to Charity Hospital and Schumpert Memorial Sanitarium
SHREVEPORT, LA.

Attempts at repair of the ovarian tube and vas deferens have always been fraught with uncertainty as to whether the lumen of the tube, after simple suturing, would remain patulous or would become obliterated at the site of the suture line. So far as we are able to find out, obliteration of the lumen at the line of sutures is the usual result.



New method of anastomosis as applied to ovarian tube.

It has seemed desirable that some simple method of repairing these structures that would give reasonably certain results be devised. The following plan we have used successfully in three cases, one of which will be cited as an example.

When the ovarian tube or vas deferens has been divided from any cause, the cut ends are picked up, a piece of No. 0 twenty-day catgut is inserted 3/8 inch into each end of the tube and the ends are brought together with two apposing catgut sutures, as shown in the illustration. The lumen cannot become obliterated at the time of healing of the divided ends because the gut is in the canal and will remain there until after repair is complete and Nature has ceased to throw out reparative tissue. The gut, being of absorbable material, is soon completely removed. Gentleness should be exercised in the introduction of the catgut so as not to traumatize the epithelial lining.

CASE REPORT

Mrs. C. R., aged 29; married nine years, had never been pregnant. She was operated on two years previously, at which time the left tube and ovary were removed. She was operated on by us in February, 1913. At this time a small hemorrhagic cyst was removed from the right ovary with about ½ inch of the middle third of the corresponding tube, which was constricted from previous inflammation and proved, after removal, to have an obliterated lumen. The remainder of the tube was patulous. We then anastomosed the tube according to the technic described. This patient is now pregnant.

The operation will find a field of usefulness in the male and female in cases in which the lumen of these tubes has been destroyed.

A CASE OF HODGKIN'S DISEASE TREATED WITH BENZENE

G. B. Lawson, M.D., Roanoke, Va., and E. A. Thomas, M.D.,
Wytheville, Va.

History.—The patient, G. P. K., white, a farmer aged 59, was admitted to the Jefferson Hospital, Roanoke, Va., in January, 1912. His past history was practically negative except for slight attacks of acute inflammatory rheumatism at the age of 36, again at 41 and again at 44. In March, 1911, he had an attack of fever, with headache and general aching pains. This was diagnosed as the grip. Three days after the onset the lymph-nodes on both sides of the neck began to swell, increasing rapidly for a few days, and shortly after this he noticed markedly enlarged epitrochlears. The swelling of the lymph-nodes increased gradually until the patient was admitted to the hospital.

Examination.—On admittance there was marked enlargement of the cervical lymph-nodes on both sides; the swelling on the two sides almost met in front, forming a collar. The individual lymph-nodes tended to be separate and freely movable. The epitrochlear lymph-nodes were about the size of a robin's egg. The lymph-nodes in the groin were only fairly enlarged. There was practically no enlargement of the lymph-nodes in the axilla. The blood showed 5,000,000 reds with hemoglobin of 90 per cent. The leukocytes numbered 7,000, with practically a normal differential count. The physical examination was otherwise practically negative.

Treatment and Result.—The patient was treated with the Roentgen ray for four weeks. Under this treatment the lymph-nodes with the exception of the epitrochlears gradually became smaller. A month after the Roentgen treatment was stopped the lymph-nodes were larger than before treatment. In the summer of 1912 the patient was again given Roentgen treatment, and the lymph-nodes again became smaller; but shortly after the treatment was stopped they enlarged again.

Examination in March, 1913, showed swollen lymph-nodes almost encircling the neck in front and extending out beyond the lower jaw at the sides. The epitrochlears were the size of a walnut; the lymph-nodes in the groin were somewhat enlarged, with some enlargement of the axillary lymph-nodes. There were a number of enlargements behind the shoulders and in the lumbar region. These appeared to be subcutaneous lymph-nodes. There was marked cough due to pressure on the bronchi by lymph-nodes. Shortly after this the patient was put on benzene (benzol) by Dr. Thomas. The dose was 5 minims three times a day at first, increased to 10 minims. This dose was continued for six weeks. Two weeks after the benzene was begun, the lymph-nodes everywhere began to diminish in size, and they continued to get smaller even after the benzene was stopped.

Examination in August, 1913, showed barely palpable lymph-nodes in the neck. The epitrochlears were smaller than a butter-bean. There was no enlargement in groin or axilla. The subcutaneous lymph-nodes on the back had entirely disappeared. The patient has worked hard as a farmer for the last few months.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

BACILLUS OF BORDET-GENGOU VACCINE.—This vaccine is believed to be of service in the prevention and also in the treatment of whooping-cough.

Greeley Laboratories, Inc., New York City.

Bordet-Gengou Bacillus Vaccine for Whooping-Cough Prophylaxis.—This vaccine is marketed in three doses, containing respectively 200, 400 and 800 million killed Bordet-Gengou bacilli; put up in a special hypodermic unit container.

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Manufactured by Fairchild Bros. and Foster, New York City. No U. S. patent or trademark.

The br [illegible] by inoculation and incubation upon Cohendy [illegible] medium.

Therapeutics

INCONTINENCE OF URINE IN CHILDREN

This troublesome neurosis or nervous reflex of the bladder occurs mostly at night, and occurs in both boys and girls. More or less involuntary evacuation of the bladder at night is not considered abnormal in a babe or a young child, but when a child is over 4 years of age, at least, it must be considered more or less pathologic.

The most frequent tangible causes of this disturbance are worms, and especially pin-worms, elongated or adherent prepuce or adherent clitoris, and the general restlessness and poor sleep caused by adenoid tissue in the pharnyx interfering with breathing; less frequent causes are bladder irritation caused by an actual inflammation in the bladder, or by calculi. Of course simple or specific urethritis, vaginitis or any foreign matter in the vagina may be causes; so may diabetes mellitus, and diabetes insipidus, the peculiar nervous condition evidenced by polyuria.

If no one of the before-mentioned etiologic factors is present, one must assume that there is a congenital weakness of the sphincter muscle of the bladder, or that the urine is irritable and that there is a congenital hypersensitiveness of the bladder, so that the least distention causes its contraction. The normal desire to urinate probably comes as a rule from the posterior portion of the urethra slightly dilating and allowing urine to trickle into it. If this relaxation of the sphincter occurs abnormally, of course the reflex desire to urinate is abnormally frequent.

If any of the foregoing reflex causes of nocturnal enuresis are present, proper treatment will stop the wetting of the bed. If none of these tangible causes are present, then one must have recourse to various more or less successful treatments; and perhaps more valuable than medicinal treatment is a rearrangement of the general management of the child. It should be urged that the loosening of an adherent prepuce or an adherent clitoris may alone immediately cure the patient of wetting the bed.

The diet is important in the general management of such a child, and as soon as the child is of such an age that milk is not necessary for its food it is better to restrict the amount of milk, as nearly two-thirds of milk must be passed out by the urine. Of course coffee and tea should be eliminated from the diet of all children, especially of children suffering from this condition. The nearer the diet is vegetarian and cereal, the better for the patient, as vegetables keep more water in the intestines and pass more water out by the bowels and less by the urine than does a diet of more or less meat. All fluids should be restricted after 3 or 4 p. m. and the child should be awakened to urinate when the parents go to bed. Preventing the child from lying on its back and raising the foot of the bed are old methods which are pretty generally known. The object is to prevent, if possible, the urine trickling into the back part of the urethra and starting the vesical spasm.

While the child may be treated psychically, or mentally impressed with different physical treatments, and perhaps in some way frightened into keeping up a nocturnal memory picture of the necessity of waking when the desire to urinate occurs, still, the patient should never be punished, as this is rarely of any value.

Various electrical treatments have been tried, and probably none any more successfully than the faradic with an indifferent electrode over the spine and an active small electrode applied over the bladder, over the pubis and over the perineum, and the current made sufficiently strong to cause more or less contraction of the tissues. Theoretically this application of electricity may cause contraction and stimulation of the sphincter of the bladder, but most likely the greatest amount of good is done by the psychic effect on the child. Sometimes the galvanic or constant current, with the large electrode on the spine being the anode and the more active smaller electrode being the cathode and the current allowed to make and break, is successful.

Often the passing of sounds has seemed to be the cause of improvement. In other cases a cold perineal douche, or cold-water spongings applied to the perineum apparently cures the condition.

Medication has not been very satisfactory, except that when there is anemia, of course iron is indicated. Probably the most successful drug is atropin, either in the form of belladonna or atropin sulphate, and the amount given should be sufficient to cause some physiologic action. The dose to begin with would be 1/500 grain of atropin sulphate to a child 5 years old, administered at bedtime. This dose should be increased until some physiologic activity is evident. Strychnin in the form of the sulphate, or as nux vomica has been recommended, but it is theoretically contra-indicated as exciting the nervous activity of the spinal cord. Bromids to depress the irritability of the spinal cord may apparently be more indicated, but such administration of bromid for more than a few days is bad treatment for any child, as it interferes with the whole nutrition. Frequently ergot is a successful medication, especially when there is a tendency to polyuria or diabetes insipidus. The ability of ergot to stimulate smooth muscle fiber is well understood, and that it is more or less of a sedative to the central nervous system is believed by many clinicians. The ergot is best administered as a thoroughly active fluidextract in doses of 10, 15, 20 or more drops, depending on the age of the child, and given directly after the evening meal.

Though almost any treatment may at times be rapidly successful, it must not be forgotten that many of these cases of nocturnal enuresis end abruptly without any special treatment, and the most inveterate cases frequently have the trouble cease at puberty, owing probably to a better development of all the muscular tissues of the genito-urinary tract.

IMPORTED MEDICATION

There has long been a tendency in the United States on the part of writers of scientific articles to quote largely from the work of foreign investigators, giving them due credit, and to forget to quote and give credit for as good or even better work done in this country. Our loyalty to ourselves should counteract this tendency. Many an article, valuable and well written, has a long list of quotations from workers abroad though often a very small list of references to those at home. In fact, it almost seems at times as though the work done by our own men was deliberately overlooked.

Except in case of some specific treatment, or some scientific findings, or some recent pharmacologic investigations, the imported medicinal recommendations, especially the prescriptions given for use in certain diseases or conditions, are generally worthless from the standpoint of scientific medication. Unfortunately, and probably thoughtlessly, many of the best medical journals give weight to these importations of fool prescriptions by quoting them as abstracts or in their therapeutic departments. A number of times we have called attention to this error in judgment, as it appears to us.

A large number of these questionable prescriptions come from France, and often carry with them the weight of the opinion of a noted clinician. But generally the mixtures thus offered are irrational, nauseating, many times footless, and often the principal ingredient in the prescription is a simple and well-known drug.

The two following prescriptions[1] have recently been copied from a Paris publication into one of our best journals:

A FORMULA FOR COMBINED STOMACHIC AND LAXATIVE EFFECTS

"℞

Fluidextracti rhamni purshianae,		ʒ v	(20 grammes)
Tincturae nucis vomicae,		ʒ ss	(2 grammes)
Aquae laurocerasi,			
Syrupi,	āā	℥ ss	(15 grammes)
Aquae destillatae.		℥ iii	(100 grammes)

"M. Sig.: Three or four teaspoonfuls daily."

Cherry laurel water seems to be used in prescriptions in Germany and France much as an invocation to the gods would be—we put this cherry laurel water in, therefore the prescription will do good—much as a dash of iodoform on a fresh wound was some time since used to insure perfect asepsis.

This is the age in which patients do not desire, and often will not take, nauseating preparations. To increase the disagreeableness of the fluidextract of cascara sagrada by adding more bitter, the tincture of nux vomica, and a sickish sweet, the syrup, in a preparation to increase a patient's appetite (namely, a stomachic) is of course absurd.

If such a patient were given one or two drops of the tincture of nux vomica in a wineglass of water three times daily, before or with the meals, the appetizing effect of the bitter would be insured in the pleasantest possible way.

The laxative, cascara sagrada, could be given more pleasantly once, at bedtime or after supper, in a tablet containing an active preparation of this drug; such active tablets can be procured. This is not to discuss or to decry the practice of giving small doses of cascara sagrada two or three times a day as a laxative treatment, if the physician deems it advisable, but if that is the treatment that he desires he certainly should not make the nauseating combination above presented.

The second prescription is for the relief of amenorrhea, "in which rheumatic disturbance of the uterus is believed responsible":

"℞

Potassii iodidi,		ʒ ii	(8 grammes)
Vini colchici seminis		ʒ i	(4 grammes)
Syrupi sarsaparillae compositi			
Aquae destillatae	āā q. s. ad	℥ iss	(50 grammes)

"M. Sig.: Three teaspoonfuls a day."

It is so delightfully simple to be able to decide that an amenorrhea is due to a rheumatic disturbance of the uterus, and it would hardly be considered fair to ask the diagnostician if he could prove it.

Certainly, the patient with a rheumatic uterus who is suffering from the pangs (?) of amenorrhea would also suffer from disturbance of the stomach if she took the mixture offered.

Iodin in any form may so stimulate the thyroid gland that it in turn will stimulate the ovaries and uterus to normal activities. But in giving potassium iodid, for instance, it seems hardly necessary to offer this ancient combination which was presented long before anyone now on earth was born (though it is not necessary to determine its exact age), when iodid was administered in the dear old syrup of sarsaparilla comp. with the addition of colchicum in some form when rheumatism or gout was supposed to be present.

It should be remembered that this prescription represents the administration of potassium iodid, wine of colchicum seeds, sarsaparilla, glycyrrhiza, glycerin, ammonia water (fluidextract of glycyrrhiza), fluidextract of senna, sugar, oil of sassafras, oil of anise, and oil of wintergreen. The Pharmacopeia says that the compound syrup of sarsaparilla and the fluidextract of glycyrrhiza may be made with ordinary water, while the prescription very carefully calls for distilled water. This questioning of the character of the water would seem needless if it were not generally absurd. The specification in a prescription of distilled water (which is often not fresh), while the other ingredients of the prescription are made with ordinary water, seems an uncalled-for refinement.

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[1] Copied verbatim from the Paris médical.

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SATURDAY, DECEMBER 13, 1913

METABOLISM IN CANCER

The study of cancer has been approached from a number of directions, which, for the most part, have been determined by the previous experience of the persons engaged in cancer research. Pathologists have been responsible for the search for infective organisms; biologists have elaborated the investigation of specific types of cell proliferation in connection with neoplasms; physiologic chemists have sought for evidences of fundamental alterations in tissue metabolism. This competition among different lines of scientific endeavor has been wholesome and stimulating to the study of disease, as it has furnished various points of view which would probably never have become recognized had it not been for the highly practical considerations which called forth so much effort on the part of many workers.

Although the investigation of the metabolism of cancer patients has contributed a large and growing literature, in the main it has remained a collection of disconnected facts and observations, some of them interesting in themselves, yet bearing no obvious relation to one another or to any underlying organic disturbance which could not be explained quite apart from the specific disease in question. Thus the protein metabolism is generally found to be exaggerated, and evidences of acidosis and an attendant increased ammonia excretion have frequently been reported. This, however, is little else than the metabolic story of partial inanition which attends the cachectic states that accompany so many chronic diseases. The "demineralization," that is, the gradual undue loss of inorganic elements from the organism, is likewise certainly not to be regarded as characteristic of cancer alone. Considerable has been written from time to time regarding the increased output of products of incomplete metabolism or oxidation in the body. Friedrich Müller and others have long since pointed out that the increased protein decomposition may be so pronounced in cases of advanced carcinoma that it is impossible to maintain the patients in nitrogenous equilibrium despite large food intakes. Some of the European investigators have laid much stress on an apparent increase in the output of so-called "oxyproteic acids" and of unoxidized or "neutral" sulphur compounds in the urine. Here again the fact that the largest figures have been found in carcinoma must be correlated with the consideration that in this disease decreased ingestion of food and intensive disintegration of tissues may go hand in hand. At any rate, without being committed to the view that the findings are pathognomonic of cancer, we may appreciate that an increased urinary elimination of incompletely catabolized protein residues — the *Eiweissschlacken* of the German authors — is present in cancer as it may be in cachexias of other sorts.

Dr. Saxl of the First Medical University Clinic in Vienna has lately attempted to interpret the diverse features of cancer metabolism from some common etiologic point of view.[1] He has called attention to the fact that many of the phenomena of metabolism which we have just reviewed are symptomatic of inadequate tissue oxidation as it is presented in the classic forms of poisoning with cyanid. Can it be that small amounts of cyanid radicals are formed in carcinoma? Hydrocyanic acid is known to arise in the metabolism of plant forms. In the animal organism, in which it is notably poisonous, it is in part detoxicated by becoming transformed into sulphocyanid. Sulphocyanids are not unknown in the secretions and excretions of the human organism.

In attempting to reconcile clinical facts with chemical theory, Saxl has actually observed that the administration of small doses of sulphocyanids leads to unmistakable excretion of the oxyproteic acid residues to which reference has already been made. Here, then, is a parallelism between the protein metabolism of the carcinomatous individual and the metabolic disturbances set up by sulphocyanids. The next step obviously was to search for sulphocyanid in the output of cancer patients. According to Saxl, the content of sulphocyanid in the urine of the latter is undeniably larger than what is found in the kidney output of healthy man or in other types of disease. The increase in sulphocyanid appears to be independent of food intake, anemia or cachexia; and such augmented elimination as may attend some febrile conditions is far smaller than that found in cancer. From these facts he draws the conclusion that there is a disturbance in sulphocyanid metabolism in carcinoma.

We have survived too many hypotheses in regard to this elusive disease to accept every new generalization, however plausible it may appear at first inspection of the evidence; yet we are always glad to recognize every scintilla of new suggestion which may furnish a welcome guide to progress. For the present we must agree with von Fürth that the discovery of a specific urinary test of diagnostic usefulness in carcinoma still remains in the land of blessed hopes.

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[1] Saxl, P.: Ueber die Störungen im Eiweissstoffwechsel bei Krebskranken (Zugleich ein Beitrag zur Kenntnis der Rhodanausscheidung), Biochem. Ztschr., 1913, lv, 224.

THE LIVER AND KETONURIA

The attempt to find the organs and tissues of the body in which definite physiologic and pathologic processes have their seat is characteristic of the modern study of intermediary metabolism. We are no longer content to ascribe some particular phenomenon to "disturbed nutrition" or "perverted metabolism"; but physiologic science seeks to ascertain and indicate with precision the nature of the upset in question and to find the special part of the organism directly concerned therewith. To some degree this has been successfully accomplished in various instances by the method of exclusion. When, for example, the thyroid or the pancreas is removed from its normal connections with the remainder of the body, the altered functions of the latter betray something of the rôle which each of these organs may be conceived to play in the normal physiologic work of the individual. Again, the method of perfusion of isolated organs has enabled the investigator to compare the intake and output of these individual anatomic parts independently of the simultaneous activity of other organs, and to draw conclusions regarding the degree and sort of participation which they are engaged in under ordinary circumstances. It is, of course, always desirable to control and corroborate the findings of such methods by suitable observations on the intact individual, wherever this is possible.

Largely as a result of perfusion studies it has been taught that the liver is the organ in which the formation of the "acetone bodies"—acetone, diacetic acid, beta-hydroxybutyric acid—goes on. What has hitherto been believed as the outcome of such indirect evidence has now been clinched by more direct experiments. Fischler and Kossow[1] have accomplished the demonstration of the correctness of the current view of excluding the participation of the liver in metabolic activities in large measure by means of the familiar expedient of an Eck fistula whereby the portal blood-supply is diverted directly into the vena cava. Animals thus prepared exhibit far less ketonuria under suitable chemical provocation than do the subjects with normal livers. On the other hand, when by a sort of reversed Eck fistula specially devised by the German investigators in the medical clinic at Heidelberg an exceptionally large blood-supply is furnished to the liver, the output of the characteristic members of the ketone group of compounds is markedly increased. The ketonuria may thereby reach enormous proportions.

Although no one is justified at present in concluding that the liver is the sole organ concerned in the phenomena of ketonuria, the sharp parallelism between the quantities of eliminated ketone derivatives and the varying degree of hepatic participation so far as it can be controlled by altering the richness of the blood-supply to the liver, furnishes the best evidence yet offered.

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[1] Fischler, F., and Kossow, H : Vorläufige Mitteilung über den Ort der Acetonkörperbildung nach Versuchen mit Phlorrhizin und der partiell ausgeschalteten Leber nebst einigen kritischen Bemerkungen zur sog. Fleischintoxikation beim Eck'schen Fistelhunde, Deutsch. Arch. f. klin. Med., 1913, cxi, 479.

HUMAN PANCREATIC SECRETION

Through the inspiration of Pawlow and very largely under his personal leadership new points of view have progressively developed as to the mode in which the digestive secretions are elaborated. Derived almost entirely from experimentation on animals, the facts have nevertheless received wide application to the conditions that obtain in man. We need only mention the now familiar phenomenon of the psychic secretion of gastric juice, the possibility of stimulating and inhibiting secretion by food factors, and the influence of the latter on the enzyme content of the various alimentary digestive fluids, to indicate some of the novelties which have been introduced into the modern physiology of alimentation.

It requires no extended argument to convince one that such facts and conclusions as are the result of observations on the higher animals deserve to be verified or at least tested in every feasible way on man. Human gastric juice is not unknown in the biochemical laboratory nor has the pancreatic juice of man been an extreme rarity there. Until very recent years, however, these and similar secretions have been studied, when possible, almost solely as specimens in which acidity or alkalinity and various characteristic enzymes were demonstrated. Under the dominance of the newer ideas which involve functional adaptations as well as the mere constituents of composition, revision and renewed investigation have become imperative whenever suitable cases are found and the none too frequent opportunities arise. The pancreatic secretion obtained through a fistula in man carefully examined in the medical clinic of the University of Helsingfors by Holsti[1] has fortified our knowledge as to its function and has served to "check up" the conclusions derived from the facts of animal experimentation. First of all, it has been demonstrated for the first time, we believe, that a so-called psychic secretion of pancreatic juice occurs in man, as has also been verified for the gastric juice,[2] though the psychic factor plays a much less prominent part in the case of the pancreas. The mere sight of food or the act of mastication or swallowing is not sufficient, as it is in the case of the stomach, to induce psychic secretion of pancreatic juice. Inasmuch as the latent period prior to the actual flow of the pancreatic secretion is only one or two minutes, whereas that of the gastric juice is four or five minutes, the pancreatic flow cannot be due to an escape of "psychic" gastric juice into the duodenum, which, it is well known, will provoke a flow of pancreatic secretion. The psychic secretion of the pancreas presumably independent of gastric causes lasts about one-half hour. The continuance or cessation of further secretion depends on the nature of the ingested food. If the discharge from the stomach into the duodenum proceeds, a suitable stimulus for pancreatic flow is thereby furnished. The rate of flow is therefore modified in accord with the influence of different foodstuffs on the secretion into and the rate of discharge from the stomach. With a preponderance of carbohydrates it is prompt and long continued in contrast with the delay and brief effect evoked by pure fats. Thus comparable quantities of widely different foods furnished secretory data of the following order: rice, 51 c.c.; meat, 34 c.c.; oil, 22 c.c. The content of digestive enzymes in the secretion obtained varies widely.

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[1] Holsti, Ö.: Beiträge zur Kenntnis der Pankreassekretion beim Menschen, Deutsch. Arch. f. klin. Med., 1913, cxi, 48.

[2] Hornborg, A. F.: Bidrag till kännedom om magsaftsavsöndringen hos människan, Finska läkaresällskapets handlingar, 1903, xliv, 381. Umber, F.: Die Magensaftsekretion des (gastrostomierten) Menschen bei "Scheinfütterung" und Rektalernährung, Berl. klin. Wchnschr., 1905, p. 56.

The secretagogue effect of hydrochloric acid on the pancreatic function is familiar. Water is not without a distinct though evanescent action. Soda inhibits the secretion, as is the case in animals. These and other facts which need not be recited here indicate clearly that in their general features the phenomena of pancreatic secretion are essentially alike in man and the dog—the animal which has furnished the classic data on the subject.

NEW TESTS FOR LIVER FUNCTION

On previous occasions we have pointed out the shortcomings of various so-called tests for functional disorders, in particular as they apply to the liver.[1] The fact that few of them measure up to the strict requirement of the specific application intended for them and that most of the proposed methods—usually in the form of tests for the comparative tolerance of sugars—involve physiologic consequences of still undemonstrated character, has placed a limitation to the wide-spread introduction of these diagnostic aids. When the liver, or any other organ, is charged with the responsibility for a certain physiologic duty, and a corresponding task is set to ascertain whether or not the organism is capable of performing it, we must be convinced, on the one hand, that the organ under examination really is normally the effective agent in the transformations involved, and, on the other, that no different tissue can act in a compensatory manner. Only under such carefully controlled circumstances will the failure to accomplish the task be convincing evidence of the temporary functional inefficiency of the organ involved and furnish a dependable diagnostic test.

The very fact that so few of the proposed tests for hepatic function have been able to withstand the criticisms aimed at them, and thus to become a part of diagnostic routine, makes it the more urgent to devise new ones based on carefully investigated premises. Because they appear to be supported alike by sound physiologic considerations, verified by clinical evidence, exploration and necropsy findings we refer to three new tests proposed by Whipple[2] and his collaborators at the Johns Hopkins Hospital. The first of these is the lipase test. This enzyme is present in the blood-plasma or serum of normal individuals in quite constant amount. Experimental injury of the liver, by chloroform, phosphorus or hydrazin poisoning, for instance, will always cause a rise in plasma lipase. The test appears to be of value in certain groups of human cases. In eclampsia, for example, in which liver injury is postulated by many and hemorrhagic portal liver necroses are commonly observed at necropsy, the lipase figures are high; in pernicious vomiting of pregnancy and uremia with convulsions the lipase data are normal, by way of contrast. The Baltimore investigators note that pneumonia, peritonitis, leukemias and various infections may show a rise in lipase to double the normal or even more. This need not confuse one, however, for they remark that probably in such conditions the excess of lipase is referable to liver changes, either liver injury or liver stimulation due to cell-cleavage products circulating in the blood. The lipase test can be carried out with uncomplicated apparatus and by a relatively simple technic.

A second possibility which may develop into a test for hepatic function concerns the fibrinogen normally present in blood-plasma. It has been shown that this blood protein may fluctuate with liver injury, falling to a low content at the time of the hepatic damage and returning above normal during the repair which rapidly follows.[3] From data already available it appears that when the fibrinogen is pronouncedly decreased it indicates a grave condition and may mean advanced liver injury, acute or chronic. The fibrinogen index is sometimes very low in certain cases of hepatic cirrhosis, and thus assumes the gravest prognostic import. In human cases of fatal late chloroform poisoning the fibrinogen content may likewise drop. On the assumption here involved that the liver is intimately concerned with the production of the fibrinogen, which is in turn responsible for the clotting of the blood, it is interesting to note that when the liver is exposed to minor injuries it may respond with an overproduction of fibrinogen. The small damage may be looked on, we are reminded, as a stimulus; and the high fibrinogen content found in pneumonia, septicemia, peritonitis, etc., can be explained by the action of certain substances on the liver epithelium. They may be derived from the disintegration of body-cells or foreign cells, and when very abundant may be able to cause degeneration and even liver-cell necrosis; in lesser amounts they may be imagined to have a stimulating action on the liver.

A third proposed hepatic test makes use of the drug phenoltetrachlorphthalein which has been demonstrated to be excreted by the liver into the bile.[4] This substance, which gives brilliant color responses like the other phthaleins in familiar use, must be introduced in a nonoral manner so that a determination of its appearance in the feces will serve as an index of the extent to which it is poured into the duodenum in the bile. Purgation is employed to furnish the intestinal contents promptly when desired. Studies on animals have indicated a remarkable degree of secretory activity and specificity of the liver epithelium. When liver injury is produced by chloroform, phosphorus or similar hepatic poisons the output in the feces may drop to mere traces, depending on the extent of the hepatic damage. The phthalein then comes out in the urine. The drug is not secreted by the intestinal mucosa and in complete obstructive jaundice there is never a trace of phthalein in the feces. Whipple accordingly believes that this new drug gives promise as a functional liver test. It is excreted in the bile through activity of the hepatic epithelium, not that of the bile-duct. Any agent which injures the liver parenchyma or interferes with its functional activity will cause a drop in the phthalein output in the feces.

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[1] Functional Diagnosis—the Liver, editorial, The Journal A. M. A., Jan. 25, 1913, p. 287.

[2] Whipple, G. H.; Mason, V. R., and Peightall, T. C.: Tests for Hepatic Function and Disease under Experimental Conditions, Bull. Johns Hopkins Hosp., 1913, xxiv, 207.

[3] Whipple, G. H., and Hurwitz: Jour. Exper. Med., 1911, xiii, 136.

[4] Abel, J. J., and Rountree, L.: Jour. Pharmacol. and Exper. Therap., 1909, i, 231.

Only a wide application and unbiased tests in varied conditions of disease will finally determine the clinical value of the interesting reactions here reviewed. To say the least, they promise to furnish experience which will lead to a more accurate definition and discrimination of the anatomic and functional abnormalities of the liver; for they are based on investigated physiologic considerations.

Current Comment

OZONE TO HIDE ODORS

"We have long been of the opinion," says the San Francisco *Argonaut,* "that whatever is unpleasant is bad for us, and we have endeavored in our humble and unscientific way to rule our lives accordingly. That is why we object to cold mutton and to being contradicted. They are bad for us — we felt it was so without knowing the reason." This was apropos of the contention of Dr. Hill of London that ozone is of value, not because it kills germs, but because it removes odors and the like that are injurious because they are unpleasant. Here we have an apparent conflict between esthetics and health. The instinctive shrinking from bad odors is almost a natural protective mechanism. At first thought there comes to mind only one really edible substance possessed of a bad odor, and it has fallen into some disrepute. The man who first remarked, "I smell a rat," voiced a grave suspicion. We have always been suspicious of that which was openly unpleasant, but remembering the man who "had an ax to grind," we have been more suspicious of that sweetness which masks a hidden unpleasantness. When we see a costly, intricate, whirring apparatus and perceive a new peculiar odor, our olfactory organs stimulate our association tracts, and behold, we too, begin to smell a rat!

TRUE RECREATION

We hear much of the need of relaxation for the "tired business man" and the "jaded society woman." Their needs are supposed to be met, in the first place, by amusements devised for inert and vacant minds, and, in the last resort, by the "rest-cure." Meanwhile, as a recent writer[1] observes, our octogenarian colleague whose name is so frequently associated with this therapeutic measure is demonstrating in his own person the fact that one may fill well-ordered days with steady accomplishment and find recreation, not in passivity, but in a complete change of mental occupation. Thirty years ago Dr. S. Weir Mitchell undertook to write a novel as a vacation pastime after his winter practice. The result was "In War Time," which had a large and immediate success. The effect on Dr. Mitchell himself, even before the success of his novel came to corroborate it, was a thorough recreation, a veritable refreshment of faculties that sent him back to his work reinvigorated and satisfied. He has continued since to take up some serious literary labor every summer. His vigor of mind and body now, when well past four score years of age, attest the healthfulness of this practice begun in middle life. It is possible, indeed, that rather too exclusive stress is laid on it in the article mentioned. Doubtless Dr. Mitchell's health and long life are due in large measure to his habit of changing his environment as well as his occupation every summer. At all events, his example is instructive. It is well to remember that many patients whose nervous condition is on the down grade toward nervous exhaustion need, not rest or frivolous amusement, but a new and absorbing mental occupation that will take their minds entirely out of the beaten tracks of their previous interests.

THE CRISIS IN GERMANY

According to our German exchanges, a struggle between the medical profession and the sickness-insurance societies — *Krankenkassen* — is impending, which, in the view of the medical authorities, is a life-and-death contest involving the independence of the medical profession. With remarkable unanimity, the delegates to a special meeting of the Aerztetag, the organization which deals with the economic interests of the profession, representing 23,000 physicians, decided to break off all negotiations with the insurance societies and deal hereafter only with the sick policy-holders individually. Jan. 1, 1914, there go into effect the new provisions of the insurance law extending its benefits to the great bulk of the population. The insurance societies are making strenuous efforts to secure physicians who will devote their whole time to the care of the insured and act as "strike-breakers." It is said that salaries as high as $3,750 (15,000 marks) per annum have been offered for this service. On the other hand, the organized medical men hope to hold their ranks unbroken so as to cripple the insurance societies and prevent their carrying out their contracts. There are mutual charges and recriminations. The medical men claim to have documentary evidence that the representatives of the insurance societies were only pretending to seek a basis of agreement in their negotiations, while they were really bent on defeating the demands of the physicians for the right of the insured to a free choice of their medical attendant. Medical men look on the move as an attempt to reduce them to the rank of paid employees on a starvation wage, thus taking away the freedom and dignity of the profession. The low fees may be appreciated by reading the proposed articles of agreement with the

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[1] Versatility and Dr. S. Weir Mitchell, Century Magazine, December, 1913.

Berlin Krankenkassen as given in our Berlin letter of Oct. 25, 1913, p. 1550, where we learn that the society proposes to pay an annual sum of $1.25 per capita, while the physicians want at least $1.37.

"MAKING FACES" AS AN AID TO HEALTH

Massage and exercise, at various times, have been advocated as a panacea for many and divers ills. Fernet[1] now proposes the idea that by exercise we may be able to influence favorably the encroaching deafness of the elderly, or that following otitis media. He remarks that children can often move the ears and part of the scalp voluntarily, and some may become quite exceptional in this faculty. Fernet believes that, through exercise, adults will be able to produce such movements. He has devised three series of exercises, as follows: The first consists of grimaces of the face, contracting in turn the muscles of the lips, nostrils and eyelids, aiming ultimately to reach the ear; next the frontal and occipital muscles are contracted alternately and then the muscles above and behind and in front of the ear. The muscles of the eustachian tube are then exercised by directions which he gives fully. He says, "Medical men, knowing the anatomy of the parts, can train their muscles very effectually in this way; others need an instructor to show them." Just what the ultimate outcome of this proposal will be is questionable. We may picture to ourselves tentatively a future period when all around us will be visible a series of grimacing, ear-wiggling elderly men and women in the act of improving their ears and warding off the encroaching deafness of old age. "Physicians, particularly," says Fernet, "need good hearing, and rather than accepting deafness with the fatalism of the Oriental, they should rise up and fight it." If it is to be combated by this method, the word "fight" is a very appropriate one.

Medical News

ARKANSAS

Hospital News.—The cornerstone of the Leon N. Levy Memorial Hospital, Hot Springs, was laid with formal ceremonies by the Little Rock Lodge B' Nai B Rith. The building is to cost when completed $100,000, and will be ready for the dedicatory ceremonies early in March.

Personal.—Dr. John B. Dooley has taken charge of the Little Rock City Hospital.——A formal dinner in honor of Drs. Verne R. Stover and Cory Wassell was given by the local chapter of the Chi Zeta Chi Medical Fraternity, Little Rock, recently. Dr. Stover sails in a few days for China as a medical missionary.——Dr. Ida Joe Brooks, Little Rock, has been appointed a member of the city Homeopathic Medical Board, vice Dr. William E. Green, deceased.

New Officers.—Pulaski County Medical Society at Little Rock, December 1: president, Dr. Alexander E. Harris; secretary, Dr. William T. McCurry.——Arkansas Society of St. Louis, Iron Mountain and Southern Railway Company surgeons at Little Rock: president, Dr. Charles S. Holt, Fort Smith; secretary-treasurer, W. F. Smith, Little Rock.——Third District Medical Society at Cotton Plant: president, Dr. Roscoe T. Gephart, Cotton Plant; secretary, Dr. Edward De W. McKnight, Brinkley.

Railway Surgeons Elect.—The Society of the Missouri and North Arkansas Railway surgeons met at Heber Springs for organization, November 24, Dr. T. B. Bradford, Cotton Plant, acting as temporary chairman. Heber Springs was decided on as the place for the annual meeting to be held December 22, and the following officers were elected: president, Dr. W. B. Snipes, Aubrey; vice-presidents, Drs. B. Cooper, Everton, and J. A. Henley, St. Joe; secretary, Dr. Cyrus F. Crosby, Heber Springs.

DISTRICT OF COLUMBIA

New Officers.—Washington Obstetrical and Gynecological Society: president, Dr. John F. Moran; secretary, Dr. Truman Abbe.

Schmidt on Dyspepsia.—Prof. Adolph Schmidt was the guest of honor of the District of Columbia Medical Society, November 12, and delivered an address before the society on "Acid Dyspepsia." Prior to the meeting Dr. Schmidt was given a dinner by Dr. William Gerry Morgan.

Women's Clinic Instituted.—An outpatient maternity service has been inaugurated in connection with the Women's Clinic Auxiliary. This service is for the benefit of that class of society which does not wish to accept charity and yet cannot afford to pay high fees. In charge of the service are Drs. Amelia Frances Foye, Alice W. Downey, Isabel H. Lamb, Cora Smith King, Louise Ross and Lillian R. Lekites; assistant physicians are Drs. Lenora C. Volkman, Evelyn Mitchell, E. Alberta Reed and Sarah M. Siewers.

Personal.—The commissioner of pensions has appointed the following three medical boards of pension examiners for the district: first board, Drs. James A. Gannon, John Van Renselaer, J. Lawn Thompson and Robert M. Ellyson, ad interim; second board, Drs. Joseph R. Biggs, Michael J. Ready, S. Clifford Cox and Lewis A. Walker, ad interim, and third board, Drs. Taylor B. Dixon, Aloysius W. Valentine, Howard Fisher and Charles H. Bowker, ad interim.——Drs. Randolph B. Carmichael and Harry C. Yarrow have been added to the consulting staff of the free night dispensary of Emergency Hospital, Washington.

FLORIDA

New Officers.—Hillsboro County Medical Society at Tampa, December 2: president, Dr. John C. Knight, Plant City; secretary, Dr. Gilbert H. Hodgson, Tampa.——Pinella County Medical Society, organized at St. Petersburg: president, Dr. Lucian B. Dickerson, Clear Water; secretary-treasurer, Dr. William McC. Davis, St. Petersburg.

Personal.—The following staff of local physicians has been appointed for the Duval County Hospital, Jacksonville: medical, Dr. Robert H. McGinniss; surgery, Drs. Paul C. Perry and John E. Boyd; gynecology, Dr. Gerry R. Holden; neurology, Dr. James H. Randolph; laryngology, Dr. William S. Manning; andrology, Dr. Thomas C. Thompson; dermatology, Dr. Joseph Lee Kirby-Smith; pathology and bacteriology, Dr. Henry Hanson. Dr. Paul C. Perry has been elected chairman and Dr. James H. Randolph, secretary of the medical board.

ILLINOIS

Inebriates Barred from State Hospital.—The superintendent of the Watertown State Hospital announces that, as the asylum is now crowded with insane patients, inebriates and other patients not insane will not be admitted to the hospital in the future.

Personal.—Dr. James H. Lacey, Albion, has moved to Denver, Colo., on account of his health. He has been succeeded at Albion by Dr. Ross L. Moter, formerly of Browns. His practice has been taken by Dr. Parmenter of Bellmont.——Drs. Carl E. Black, Elmer L. Crouch and George H. Stacy have moved their offices to the Ayres Bank Building, Jacksonville.

Chicago

Chicago Dispensary Closed.—The Northwest Side Free Dispensary was closed November 28, and the funds of the organization were turned over to the Federated Orthodox Jewish Charities of Chicago.

Personal.—Dr. Charles F. Sanborn, assistant superintendent of Cook County Hospital, has been appointed superintendent of the new Cincinnati General Hospital.——Dr. Herman A. Moje was seriously injured in a collision between automobiles, December 6.——Dr. Karl H. von Klein is reported to be critically ill in Cook County Hospital.

Vision Conservation.—The Illinois Association for the Conservation of Vision and Prevention of Blindness accepted an invitation extended by the Illuminating Engineering Society to attend a demonstration of "Five Years' Progress in Indirect Illumination," December 10. One department of the work of the association is closely connected with the matters of illumination, eye fatigue, etc.

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[1] Fernet: Bull. de l'Acad. de Méd., 1913, lxxvii, p. 209.

Civil Service Examination.—The Cook County civil service committee announces competitive examinations open to citizens of the United States for appointment on the staff of the Cook County Hospital in the following departments:

Department of:	Date of Examination	Hour
Nervous and Mental Diseases	December 15	7 P. M.
Contagious Diseases	December 16	7 P. M.
Children's Diseases	December 17	7 P. M.
Tuberculosis	December 18	7 P. M.
Skin and Venereal	December 19	7 P. M.
Eye	December 22	7 P. M.
Pathology	December 23	7 P. M.

Appointments are for a period of six years (no salary) with a continuous service of six hours per week throughout the year. Applications for these examinations will be forwarded on request made to Thomas B. Garland, chief examiner, Cook County Civil Service Commission, Chicago.

MASSACHUSETTS

Personal.—Dr. John Wallace, Roxbury, Boston, has returned from Europe.——Dr. Alexander C. Eastman has been elected president and medical director, Dr. Oscar W. Roberts a vice-president, and Dr. Lawrence D. Chapman, a director of the Springfield Babies' Feeding Association.

Community Sanitation.—Eight towns with Wellesley Hills as a center are now guarded from infectious diseases by bacteriologic stations having a main station at Wellesley Hills. The towns are Belmont, Framingham, Wellesley, Needham, Weston, Melrose, Canton and Winchester. This idea of community sanitation was originated by Prof. Earl B. Phelps of the Massachusetts Institute of Technology, sanitary engineer of the Board of Health. Each town contributes from its budget a certain sum toward the maintenance of the cooperative health service and if there is a deficit, it is made up by the institute.

MINNESOTA

Fire in Railroad Hospital.—Fire in the Northern Pacific Hospital, Brainerd, November 26, caused $5,000 damage, and necessitated the removal of patients from the medical ward of the institution. No casualties occurred.

Tuberculosis Removal Law Enforced.—The health commissioner of Minneapolis on November 20 made first use of the state law which authorizes health officers to remove tuberculosis patients from private homes to public hospitals in order to prevent the spread of infection.

Personal.—Dr. Arthur W. Ide, Brainerd, has been appointed division surgeon for the Northern Pacific Railroad.——Dr. Charles N. Hensel, St. Paul, fractured his right forearm while cranking his automobile, November 24.——Dr. Thomas Lowe, Pipestone, was elected president of the Southwestern Minnesota Medical Society at its annual meeting held in Worthington, November 13.

Hospital News.—The formal opening of the West Side General Hospital, St. Paul, took place November 27. The institution is to be operated by the Evangelical Hospital and Deaconess Home Association, which has purchased the old German Hospital and about two acres of land adjoining. About $8,000 has been expended for interior furnishing and decorations and it is planned to raise a fund of $100,000 for maintenance and improvement.

Southern Minnesota Physicians Hold Meeting.—The Southern Minnesota Medical Association held its annual meeting in Mankato, December 3. Dr. Robert H. Babcock, Chicago, gave an address on "Infections of the Heart," followed by a clinic, and it was voted to hold the midsummer meeting in Winona in August next. The following officers were elected: president, Dr. Hugh F. McGaughey, Winona; vice-presidents, Drs. John H. Adair, Owatonna, and Clifford C. Leck, Austin; secretary, William T. Adams, Elgin (reelected), and treasurer, Dr. George F. Merritt, St. Peter (reelected).

MONTANA

Personal.—Dr. Joseph A. Tremblay, Butte, has been reappointed physician of Silverbow County.——In the case of Dr. C. V. Norcross, Butte, against Peter Scherr, in which suit was brought for $1,302 for professional services, the jury returned a verdict in favor of the plaintiff, November 26.

Hospital Reopened.—The Samaritan Hospital, Glendive, which was closed in September last, was reopened November 19, under the auspices of local physicians, and will hereafter be known as the Glendive General Hospital. At a meeting of the physicians interested in the new hospital, November 17, the following officers were elected: president, Dr. R. H. Beech; vice-president, Dr. Baldwin F. Consler, and secretary-treasurer, Dr. M. G. Danskin.

Warning.—Dr. Gaylord Warstell, Big Sandy, warns against a Mr. E. S. Armstrong, a well-fed, well-groomed, round-eyed man, about 5 feet 7 inches in height, weighing 180 pounds and apparently about 35 years of age, with quilted cloth hat and gray suit. He claims to be a representative of a Minneapolis tailoring house and makes an offer of a reduction for cash for clothing, taking the physician's check in payment. Dr. Warstell asks that anyone knowing Armstrong's home address or present whereabouts will send this, with such other information as he may possess, to him.

NEW JERSEY

Sterilization Law Void.—The supreme court, at Trenton, November 18, set aside as unconstitutional the act of 1911, providing for the sterilization of epileptics, feeble-minded, criminals and other defectives.

Personal.—Dr. Mortimer J. Lampson, superintendent of the Jersey City Hospital, has resigned.——Dr. William D. Mingingham, Newark, has been appointed a member of the consulting staff of the Essex County Hospital, Overbrook.

Children's Colony to Be Established at Burlington.—The proposal to establish a Burlington County colony for the care of defective children was assured at a meeting of the colony committee, when financial report showed that more than half of the $8,000 needed for the erection of buildings had been raised by private subscriptions. The work will be under the direction of the state authorities and the faculty of the Vineland School for Feeble-Minded Children have been asked to cooperate in its management.

NEW MEXICO

New County Society.—At the last meeting of the State Medical Association, held in Albuquerque, the McKinley County Medical Society was granted a charter.

Personal.—Dr. Leroy S. Peters has purchased a part interest in the Albuquerque Sanatorium and will be associated with Dr. Abraham G. Shortle in the work of that institution.——Dr. and Mrs. Frank E. Condert, Gallup, have moved to Tempe.

Charges against Physicians Dismissed.—The indictments against twenty-five physicians of Albuquerque for failing to file death certificates with the county clerk at Bernalillo County were dismissed November 19, on motion of the district attorney.

NEW YORK

Personal.—Dr. M. J. McGrath, Oswego, has been appointed district surgeon for the New York Central System, vice Drs. James E. Mansfield and David D. O'Brien, resigned.——Dr. Leslie M. Wilkens, Lackawanna, was seriously injured in a collision between his motor-car and a street-car in Buffalo, November 27.

To Study Medical Laws.—The American Association of Medical Jurisprudence was incorporated on December 5 by the secretary of state. The object of the association is the investigation and advancement of the science of medical jurisprudence. The study will be conducted principally in the State of New York and the United States of America. The directors are Reynold Webb Wilcox, Alfred E. Ommen, Charles P. Barney, John C. West and Oscar W. Ehrhorn.

New York City

Godlee Honored.—Sir Rickman J. Godlee, president of the Royal College of Surgeons, was made an honorary member of the National Institute of Social Sciences, December 3, and presented with a gold medal in recognition of his services to humanity.

Healthful Year for New York.—The Bureau of Records announces that the city has had a most healthful year, the death-rate for the first eleven months of the year being 13.77 per 1,000 population, as against 14.08 for the corresponding period of 1912. For the week ended November 29, the death-rate was 12.51 per 1,000 population, as against 12.62 for 1912.

New York County Medical Society Elects.—At the one hundred and eighth annual meeting of the Medical Society of the County of New York, the following officers were elected for the following year: president, Dr. T. Passmore Berens; vice-presidents, Dr. Howard Lilienthal and Dr. Frederick E. Sondern; secretary, Dr. John Van Doren Young; assistant secretary, Dr. J. Milton Mabbott, and treasurer, Dr. Charles H. Richardson.

Another Building for Montefiore Home.—This institution, which has just moved into its new buildings, which were built at a cost of $2,000,000 and which accommodate 630 patients, is now planning to provide another building for the accommodation of persons able to pay wholly or in part for their treatment, and $200,000 has already been subscribed for this purpose. Until this building is completed all patients are cared for free of charge.

Site for Mothers' Home.—Mrs. Rudolph A. Muller has donated two acres of land as a site for the Home for Expectant Mothers, of which Mrs. Robert H. Sayre is president. She will also donate all the milk, fruit and vegetables required for the home from her own estate. The raising of funds for the buildings has already been begun. Each patient will have her own room during her month's stay in the home, and after leaving it will be under the care of the Prenatal Feeding Association, which will establish a chain of restaurants where mothers may get their lunches or will send visiting nurses to the homes to see that the mothers get proper food there.

Needs of Hospitals.—In the report of the Hospital Saturday and Sunday Association emphasis is laid on the increasing cost of hospital maintenance and on the decreased receipts from patients. During the past year it cost $4,932,309 to run the forty-seven hospitals of the association, an increase of $382,441 over the previous year. The income of the forty-seven hospitals last year was $18,706 less in payments from patients, $25,657 less from the city, and $21,890 less from endowment. In spite of this decrease the hospitals gave 134,272 days of hospital service, making a total of 2,084,442 days' treatment, of which 1,291,442, or 62 per cent., were entirely free.

Laryngological Society Celebrates Anniversary.—On November 25 the New York Laryngological Society, said to be the oldest society in the world devoted exclusively to that specialty, which was merged in 1885 with the Laryngological Section of the New York Academy of Medicine, celebrated its fortieth anniversary. Dr. William W. Carter, chairman of the section, presided. The historical address was delivered by Dr. Clinton Wagner. Dr. D. Bryson Delavan delivered a commemorative address and presented a bronze tablet and several historical memorabilia, and Dr. Carter accepted the tablet on behalf of the society. At the conclusion of the formal exercises, several short addresses were made by various members of the society and guests.

NORTH CAROLINA

Sanatorium Opened.—The Wilmington Red Cross Society has completed a sanatorium about two miles from the city for the treatment of tuberculosis. The institution contains accommodations for twenty patients and provides for colored as well as white patients.

Hospital News.—The Good Hope Hospital was opened in Duke recently. Thanksgiving Day was made special donation day for the institution, which received benefactions from more than two hundred citizens of the town and vicinity.——A stock company with a subscribed capital of $30,000 has been organized at Elizabeth City to build a general hospital. Four of the seven directors are physicians of the city.

Mental Hygiene Conference.—The State Conference on Mental Hygiene was held at Raleigh, November 28 to December 2, under the direction of Dr. Albert Anderson, superintendent of the State Hospital for the Insane. As a result of this conference the North Carolina Society for Mental Hygiene Study was organized at Raleigh with a provisional executive committee composed of Dr. John McCampbell, superintendent of the Morgantown State Hospital, William W. Faison, superintendent of the Goldsboro, and Dr. Albert Anderson, superintendent of the Raleigh State Hospital. Dr. Anderson is secretary of the committee.

OHIO

Society Adopts Memorial Resolution.—Summit County Medical Society at its meeting, November 4, adopted resolutions of sympathy and regret regarding the death of Dr. Herman Christian Theiss, Akron.

Hospital News.—The Barberton Hospital has been purchased by A. A. Besaw from Mr. and Mrs. S. A. Carpenter who had operated the institution since 1910. During the existence of the hospital, 630 patients have been treated with thirty-five deaths.

Hospital Staff Members Banqueted.—In celebration of the twenty-seventh anniversary of the connection of Drs. George B. Evans and Charles H. Humphreys with St. Elizabeth's Hospital, Dayton, they were given a complimentary dinner by the sisters and doctors of the staff, November 24. Dr. Henry S. Jewett, president of the staff, officiated as toastmaster.

Hospital News.—It is announced that sufficient funds have been collected to warrant the construction of a new Jewish hospital at Cleveland in the spring. It is planned to have an institution of 100 beds, to cost about $100,000.——St. Vincent's Charity Hospital, Cleveland, is having a week's campaign to raise $250,000 for the construction of a new wing for the institution.

Personal.—A. J. Ranney, for twelve years superintendent of Lakeside Hospital, Cleveland, has resigned on account of ill-health and has been succeeded by Dr. Andrew R. Warner.——Major Vernon Roberts, National Military Home, Dayton, has been appointed chief surgeon at the Milwaukee Soldiers' Home, vice Dr. Oscar Chrysler, deceased.——Drs. William T. Corlett, Henry J. Gerstenberger, Norman W. Ingalls, David Marine, and Vernon C. Rowland have returned from abroad.

New Officers.—Summit County Medical Society at Akron, December 2: president, Dr. David H. Morgan; secretary, Dr. Alexander S. McCormick, both of Akron.——Allen County Medical Society at Lima, November 18: president, Dr. Oliver S. Steiner; secretary, Dr. Paul Steuber, both of Lima.——Ashland County Medical Society, fifty-fourth annual session at Ashland, November 18: president, Dr. Frederick V. Dotterweich; secretary-treasurer, Dr. Cortland B. Meuser, both of Ashland.

Western Reserve Notes.—Dr. Oscar T. Schultz, assistant professor of pathology, has been appointed professor of pathology at the University of Nebraska.——Dr. A. A. Johnson, formerly pathologist of the City Hospital, has been appointed instructor of pathology at the University of Nebraska.——The department of pathology has moved its teaching quarters from the medical school to the pathology building of the Lakeside Hospital, that the instruction may be given in closer conjunction with the clinic and autopsy rooms.——Dr. C. M. Winn, formerly resident pathologist at St. Thomas Hospital, Panama, C. Z., has been appointed resident pathologist at Lakeside Hospital.——Drs. Hunter Robb and George N. Stewart are spending their leave of absence in Europe.——Dr. Carl A. Hamann, dean of the school, is seriously ill with streptococcus infection of the arm.

OKLAHOMA

Personal.—Dr. A. S. Riddell, Chickasha, has been appointed deputy internal revenue collector for Oklahoma.——Dr. Curtis R. Day, Oklahoma City, has been elected president, and Dr. R. H. Riley, Oklahoma City, secretary-treasurer of the Oklahoma Association for the Prevention of Tuberculosis.

PENNSYLVANIA

Personal.—Dr. James A. Peeples, Peters Creek, fell in his barnyard, November 29, fracturing his right leg.——Dr. Edward F. Menger, Fort Lauden, has been appointed resident physician of the Carlisle Indian School.——Dr. Edward B. Shellenberger, Warren, has been appointed assistant medical director of the state dispensary by State Commissioner of Health Dr. Samuel G. Dixon.

Appointments in the Medical Department, University of Pittsburgh.—The following new appointments to the faculty have been made: Dr. W. E. Gardner, assistant demonstrator in anatomy; Dr. J. W. McMeans, assistant in clinical pathology and demonstrator in pathology; Dr. J. C. Irwin, instructor in obstetrics; Dr. R. J. Cary, demonstrator in medicine; Dr. Arthur Miltenberger and John Howard Seiple, assistant demonstrators in obstetrics, and Mr. Orville J. Walker, assistant in physiology and pharmacology. The following increases in rank have likewise been provided for: Dr. Chris Gardner, from assistant demonstrator to demonstrator in anatomy; Dr. Walter L. Croll, from instructor to assistant professor in obstetrics.

Public Drinking-Cups Prohibited.—On December 1 the advisory board of the State Board of Health prohibited the use of the public drinking-cup and the common towel. Barbers are also forbidden to brush the eyebrows of customers with a common brush, and proprietors of public eating-houses and restaurants must thoroughly cleanse all dining-room utensils after each individual use. The school-boards, clerks of council and health officers have received copies of the new regulations. This order has resulted in the disappearance of glasses from all public drinking-fountains at the Capitol, and a combination public drinking-bowl and faucet has been installed for the use of clerks. Paper towels have also been placed in all departments. Episcopal clergymen are interested to know whether the new order will interfere with the common communion cup used in the service, as the common cup is regarded as part of the ritual.

Philadelphia

Personals.—Dr. George W. Outerbridge has been selected to fill the vacancy of the visiting obstetrical staff of the Maternity Hospital of Philadelphia, caused by the resignation of Dr. Levi J. Hammond.

Gift to the University.—The descendants of Dr. Priestly, the discoverer of oxygen, have presented the University of Pennsylvania with a chemical balance which was used by Dr. Priestly in his experiments more than 130 years ago.

Serum for Influenzal Meningitis.—Physicians of Philadelphia and adjacent territory can now obtain the new serum for treating influenzal meningitis by applying to Dr. Paul A. Lewis, director of the Ayer Clinical Laboratory at the University of Pennsylvania.

Four Jefferson Professors Honored.—Three hundred physicians attended the reception given by Daniel Baugh in honor of four professors emeritus of Jefferson Medical College. The guests of honor were Drs. William W. Keen, William Joseph Hearn, James C. Wilson and James W. Holland.

University Medical Societies Merged.—The John Morgan Medical Society has been formed at the University of Pennsylvania by the consolidation of the H. C. Wood, Tyson, Ashurst and Penrose societies. The new society takes its name from the founder of the medical school.

Volunteer Medical Staff.—A volunteer medical staff has been formed, composed of physicians interested in the work of the West Branch of the Y. M. C. A., whose new $250,000 building at Sansom and Fifty-Second streets was opened December 1. They are Dr. Sidney E. Bateman, Dr. Paul Elmer Reiff, Dr. Gordon Saxon, Dr. Walter J. Snyder, Dr. Samuel McClary, III; Dr. Andrew F. Snively, Dr. Harrington L. Dickinson, Dr. Oscar G. Fegley and Dr. John H. Shaw.

Little Mothers' Leagues Formed. — December 2, Little Mothers' Leagues were formed in eleven Philadelphia schools under the auspices of the Child Federation. The establishment of these classes is only a beginning. They are not compulsory, the children being chosen by the teacher of the various schools. The teachers of the various classes are themselves instructed in the day's lesson and merely repeat it to the children. The instruction is given the teachers by Dr. Samuel McClintock Hamill.

Medicine of Assyria and Babylonia.—An address will be delivered by Prof. Morris Jastrow of the University of Pennsylvania on "The Medicine of the Babylonians and Assyrians," before the Section on Medical History of the College of Physicians, in Thomson Hall at the college, December 16. This will result from the noted Assyriologist's translation of the ancient tablet lately presented to the college by Drs. S. Weir Mitchell and Richard H. Harte, the Assyrian medical code being for the first time revealed.

Advancing Joint Lecture Course.—In order that the Rush Society may be truly representative in its activity, a revision of its constitution and by-laws in two particulars was voted at the special meeting called for that purpose. The name of the society has been lengthened to read "The Rush Society for the Correlation and Support of Medical and Biological Lectures in Philadelphia," and the distinction between active and associate members has been abolished and it is now provided that "any person interested in the objects of the society may become a member on the payment of the annual dues of $2." It is believed that by these changes the effectiveness of the lectures in Philadelphia will be increased, since while each lecture will remain autonomous, the united effort will aid all to obtain an increase in publicity, attendance and financial support.

SOUTH CAROLINA

Tuberculosis Clinic Has Permanent Quarters.—The tuberculosis clinic of the Columbia Associated Charities opened November 26 in its new quarters at 917 Main Street. The clinic is open daily from 12 to 1 o'clock. Two physicians are in attendance.

Faculty Changes.—The trustees of the Medical College of the State of South Carolina, Charleston, at their meeting November 25, elected Dr. Charles P. Aimar, Charleston, professor of general surgery, vice Dr. Charles M. Rees, deceased; Dr. Allen J. Jervey, professor of the principles of surgery and surgical pathology, and Dr. Daniel L. McGuire, assistant professor of surgery.

New Hospital Opened.—The Camden Hospital was opened in Camden, December 1. The hospital was built by Bernard M. Baruch in commemoration of the beginning of the medical career in that town of his father, Dr. Simon Baruch, New York City. The hospital has an endowment of nearly $100,000, a bequest from John Burdell, and is unique as a rural hospital in that it has a dispensary attached at which incipient cases of tuberculosis may early be detected.

New Officers.—Greenville County Medical Society at Greenville, December 1: president, Dr. Charles O. Bates; secretary, Dr. Samuel G. Glover (reelected), both of Greenville.—— Charleston County Medical Society at Charleston, November 6: president, Dr. William H. Johnson; secretary, Dr. Michael M. Edwards (reelected), both of Charleston. Arrangements for building an annex to the Hospital and Training School for Nurses were submitted, and a committee was appointed to secure donations for the furnishing of the new rooms.

WISCONSIN

New Officers.—West Wisconsin District Medical Society: tenth annual meeting at Eau Claire, November 25: president, Dr. Eugene E. Tupper; secretary, Dr. Joseph C. Baird, both of Eau Claire.

Settlement of Minahan Estate.—In the Probate Court in Fond du Lac, November 25, final settlement was made of the estate of Dr. William E. Minahan, a victim of the *Titanic* disaster. The estate is appraised at more than $83,000.

Protest by Medical Society.—The Waukesha City Medical Society has passed resolutions protesting against any action by the city council which will lessen the investment of $15,000 in the hospital building. In the opinion of the society, a hospital with a capacity of less than fifteen or twenty beds cannot be made self-supporting.

Osteopaths May Not Practice Without License.—The Wisconsin Superior Court has handed down a decision in the case of W. A. Arnold, sheriff of Milwaukee County, versus Herbert Schmidt, setting forth that osteopaths cannot practice medicine in Wisconsin without first obtaining a license. The sheriff was directed to take the defendant into custody.

Dinner to New Professors.—The medical faculty of Marquette University, Milwaukee, gave a dinner to the new professors in the medical department at the Hotel Pfister, December 6. Drs. Albert J. Ochsner and Henry B. Favill of Chicago, Professor Bardeen of the University of Wisconsin, and the dean of the medical department of the University of Minnesota were among the speakers.

Personal.—Dr. William E. Scollard, Milwaukee, is reported to have been adjudged insane, November 21.——Dr. Lewis A. Kliese, Milwaukee, has been appointed examining physician for Milwaukee County of the insurance department of the state.——Dr. William F. Lorenz of the staff of the Mendota City Hospital, has been detailed by the U. S. Public Health Service to make a special study of pellagra.——Dr. James W. Frew, Milwaukee, has been commissioned Major, M.C., N. G. Wisconsin, and assigned to duty with the First Infantry.—— Dr. Charles H. Lemon has been elected president of the Milwaukee branch of the American Electric Railway Association.

County Sanatorium Notes.—Dane, Waupaca and Winnebago counties have voted down the proposition to use county tuberculosis sanatoriums.——Lakeside Sanitarium, Oshkosh, was formally opened November 26, and on this occasion there was a joint meeting of the Waukesha City and County Medical Societies.——Sunnyrest Sanatorium, the Racine County Institution for the care and treatment of tuberculosis, was finally turned over to the county board, November 27. The building was constructed and equipped for less than $35,000.——The county board of Marinette County has appropriated $20,000 for a county tuberculosis sanatorium.——Brown County Board of Supervisors has appropriated $25,000 for a tuberculosis sanatorium.

GENERAL

Tri-State Physicians Hold Meeting.—At the thirtieth annual meeting of the Tri-State Medical Association of Mississippi, Arkansas and Tennessee held in Memphis, November 11 to 13, the following officers were elected: president, Dr. John Darrington, Yazoo City, Miss.; vice-presidents, Drs. W. D. McCalip, Yazoo City, Miss.; E. C. McDaniel, Tyronza, Ark., and H. B. Everett, Binghamton, Tenn.; secretary, Dr. J. L. Andrews, Memphis (reelected), and treasurer, Dr. J. A. Vaughan, Memphis (reelected).

Bacteriologists to Meet.—The annual meeting of the Society of American Bacteriologists will be held in Montreal, Dec. 31, 1913, and Jan. 1 and 2, 1914, under the presidency of

Prof. C. E. A. Winslow. The meeting of January 1 will be held at McDowell College, the other meetings at the medical building of McGill University. The president's address on "Characterization and Classification of Bacteriologic Types" will follow the annual dinner at the University College, January 1. Dr. A. Parker Hitchens, Glen Olden, Pa., is secretary of the society.

Anti-Alcohol and Narcotic Advocates Meet.—The forty-third annual meeting of the American Society for the Study of Alcohol and Other Narcotics was held in Philadelphia, December 3 and 4, and the following officers were elected: president, Dr. John J. Kindred, New York City; vice-presidents, Drs. Alfred Gordon, Philadelphia; Daniel H. Kress, Loma Linda, Cal.; Thomas A. MacNicholl, New York City; Tom A. Williams, Washington, D. C., and Col. L. Mervin Maus, M. C., U. S. Army; secretary, Dr. G. A. Benton, Miami, Fla.; assistant secretary, Dr. De Lancey Carter, New York City; corresponding secretary, Dr. Thomas D. Crowthers, Hartford, Conn., and treasurer, Dr. Pitts Edwin Howes, Boston.

Educational Effect of Medical Inspection in the Schools.—According to the weekly *Bulletin* of the New York City Board of Health the percentage of children requiring treatment for defects other than those of the teeth has declined from 44.20 in 1909, to 30.1 in 1913. The percentage of those requiring dental treatment declined from 57 in 1909, to 49.4 in 1912; defective vision from 13.4 in 1909, to 7.3 in 1912; defective nasal breathing from 18.7 in 1909, to 7.6 in 1912; enlarged tonsils from 22 in 1909, to 10.4 in 1912; malnutrition from 3.14 in 1909, to 2.8 in 1912. By persistent follow-up work in the homes the percentage of glasses procured has increased from 27 in 1909, to 50.5 in 1912, and of tonsil operations from 22 in 1909, to 29 in 1912.

FOREIGN

Penalized for Alleged Violation of Professional Secrecy.—Our exchanges state that the insurance company refused to pay the accident insurance on a workingman who had been killed in an industrial accident, basing this refusal on the fact that the physician of the hospital where the man had died (Lille, Belgium) had found at necropsy that the victim had leukemia, and had so informed the insurance company doctor when he inquired in regard to the necropsy findings. The widow brought suit against the hospital physician claiming violation of professional secrecy. The local court acquitted him but the recent decision of the court of appeals held him responsible both from the civil and the pecuniary standpoints.

CANADA

News Items.—It is expected that in 1915 courses will commence in the new British Columbia University, of which institution Dr. Frank F. Wesbrook recently accepted the presidency.——Winnipeg had 192 cases of infectious diseases in October with nineteen deaths. Regina, Sask., had sixty-three cases of typhoid fever in October.——Medical inspection of factories to eliminate conditions producing "industrial diseases," will shortly occupy the attention of the Toronto health department.——The Ontario Board of Health has ordered Ottawa to provide a new and safe water-supply.

Hospital News.—Mr. John Ross Robertson, Toronto, has donated $10,000 for the purpose of furnishing the new wing of the Hospital for Sick Children. The city of Toronto gave $250,000 for building this new wing.——At Chatham, Ontario, December 1, Dr. *John L. Bray*, Toronto, registrar of the Ontario Medical Council, opened a new wing to St. Joseph's Hospital.——The Home for Incurable Children, Toronto, cared for thirty-one children during the past hospital year. Two new patients were admitted during the year, three were discharged and one died. The receipts for the year were $15,508.11.

Personal.—Dr. L. N. MacKechnie, port officer at Vancouver, B. C., has received instructions from the Director-General of Public Health at Ottawa, Dr. F. Montizambert, to make an inquiry into the prevalence of bubonic plague-infected rats that are now so prevalent at Seattle and Tacoma.——Dr. George A. B. Hall, medical officer of health, of Vancouver, states that city has not been so free in the last five years from infective diseases as at present.——Dr. Neil McNeil, Prince Rupert, B. C., has left for Europe.——Dr. Louis Laberge, medical officer of health of E. Montreal, has resigned after twenty-eight years' service.——Dr. Clarence L. Starr, Toronto, has been appointed chief surgeon at the Hospital for Sick Children.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Nov. 29, 1913.

The British Medical Association and the Insurance Act

Dr. Alfred Cox, medical secretary to the *British Medical Association*, has delivered an address to the Glasgow and West of Scotland branch in which he foreshadowed important changes which were likely to occur in the relations between the profession and the government in the working of the National insurance act. He pointed out that the individual physician was quite able to look after his own interests when dealing with individual patients, but when it came to dealing with organized bodies he must have some association behind him, and there was none even remotely eligible for this purpose except the British Medical Association. In future the profession would have many more dealings with organized bodies than it ever had in the past, and instead of doing anything to split it up into classes and thereby weaken it, every man should do his best to strengthen the one association which could progress to speak in the name of the profession. Some of the physicians who had not gone on the panels (that is, served under the act), were saying that the association had now become a pro-panel body and was of no use to non-panel physicians. The history of the association showed that there had never been a time when the interest of one section of the profession had not been balanced against the interests of other sections, and on the whole this had been fairly done. Consolidation of the profession was important, for there was nothing to hope for from either political party. The danger in front of the profession was that the prominent politicians in favor of a whole-time service would have their way. At the end of 1915, when the present system of medical benefit had to be reviewed, there would be a bigger fight in front of the profession than it ever had. It would have to repel assertions that the remuneration was excessive for the work done, and attempts would probably be made to reduce the remuneration, or what amounted to the same thing, increase the work. Any successful attempt to reduce the remuneration would have a reflex action on other forms of medical remuneration.

Another question which would come up would be the provision under the act of medical attendance on the dependents of insured persons. If they were included, about three-fourths of the whole population would be swept in. The panel service had the inherent defects of contract practice, but owing to the efforts of the association it included many good points of private practice as compared with the old lodge practice and was infinitely superior. The lodge doctor, if he did not keep on good terms with the small clique which ruled every lodge, was under a considerable risk of losing the whole society. This could not happen in panel practice and the remuneration was much better.

With regard to the proposed increase of the subscription to the association (from $6 to $10 a year), he asked that if it was proposed to begin *de novo* to organize the profession and provide a first-class medical journal, would they commence with a subscription of $6 a year? This subscription had been based on old conditions which had long since passed. The profession was making greater demands on the association every year. It was also proposed to create a special fund which could be used for exigencies which might arise. A great source of weakness in the struggle which had just taken place with the government was that the association had no fund except on paper out of which it could say to a physician who was hesitating whether or not he would follow the lead of the association, "If you will back up the rest of the profession we have money to devote to seeing you through any financial difficulty which may arise."

Therapeutic Possibilities of Polonium

Sir William Ramsey, the eminent chemist, speaking at a meeting of the British Radium Corporation, which is producing radium from certain ores in Cornwall, held out the prospect that there were other substances in all radium ores which might be used therapeutically. They were polonium, ionium and actinium, which at present were chemical curiosities that had not been extracted in any great quantity, though there was no very great difficulty in extracting them. He was in hopes that polonium, which was perhaps most easily produced, might prove to have therapeutic qualities. Polonium was somewhat analogous to selenium, tellurium and also to bismuth, the therapeutic qualities of which had been tested. These three elements remained in the system for some length of time, and were then excreted, but they had practically no therapeutic qualities. Polonium differed from them entirely in that it gave off alpha-rays just as radium did, and the potency of radium for therapeutic purposes appeared to depend on the alpha-rays. Radium could not be administered as a medicine. It was too expensive and probably too dangerous, as he did not believe it would be easily eliminated from the system; but the three substances he had mentioned were eliminated in about three months, and his impression was that polonium might produce its effect for about that time and then be eliminated. Of ionium and actinium he could say less, but possibly they might replace radium for the uses for which it was at the moment employed.

The Passing of Malaria

At a meeting of the Royal Colonial Institute, Dr. Malcolm Watson gave an account of his work in the prevention of malaria in the Federated Malay States. He showed that at any rate as regards dry cultivation, pool-breeding mosquitoes could be abolished by open drainage, that stream-breeders could not be so abolished, but required drainage, and that countries with no hill-stream breeders had no hill malaria. He described investigations which he had carried out in other parts of the world where malarious conditions more or less prevailed, in the Duars at the foot of the Himalayas, and in the Jeypore hills in Madras; in Sumatra, Panama, British Guiana and Barbadoes, and declared that the new knowledge had given absolute control over the malaria of low, flat land, and high hopes of control over that in hill-land. There was also every hope of abolishing malaria from rice-fields. He believed that the prevention of malaria, the improvement in health of the agriculturist and the cultivation of the land were all intimately connected, and that what helped the one would improve the other.

Alfred Russel Wallace

Alfred Russel Wallace, who discovered the principle of natural selection independently of Darwin, has died in his ninety-first year. He was born at Usk in Monmouthshire and adopted the profession of land surveyor. At an early age he was attracted to natural history, in which he took a great interest. In 1847 he undertook a voyage to South America as a naturalist and sent home many communications to scientific societies during the four years. In 1854 he went on an expedition to the Malay Archipelago, where he remained for eight years. Here he laid the foundation of the principle of geographical distribution which has since been known as "Wallace's law," and he began to study the question of the origin and mutability of species. While pondering over these subjects he recalled the principles laid down many years before on the limitation of the human population by Malthus, and then the idea of natural selection came to him as by a sudden inspiration. About the same time Darwin was led to the same discovery, curiously from reading the same work. They both sent papers on the subject to the Linnean Society, each unaware of the other's work. The society decided that the two papers should be read at the same meeting, which took place July 1, 1858. To the end of his life he took a great interest in biologic subjects and was also an ardent democrat and social reformer.

The Prevention of Glass-Workers' Cataract

Sir William Crookes, the eminent scientist, communicated to the Royal Society some experiments in which he has been engaged for six years with the object of providing protecting glasses to prevent damage to the eyes of glass-workers and others exposed to severe glare. The problem was to find a means of cutting off the heat-rays that are injurious to the eyes of glass-workers, in some cases predisposing to cataract, if not actually causing it. The experiments were conducted by mixing various metallic oxids with soda-glass. The metals used were cerium, chromium, cobalt, copper, iron, lead, manganese, neodymium, nickel, praseodymium and uranium. Each specimen of glass was cut and polished in plates 2 mm. thick. The glass was tested by the spectroscope to determine which of the light-rays were cut off, and by a specially devised instrument to find out what proportion of heat-rays was arrested. Sir William Crookes succeeded in preparing a glass that cut off the chemical, the ultraviolet and the heat-rays, but he could not avoid some light-rays being also cut off. It was not an advantage to have absolutely colorless glass, because a very bright light such as that from white cliffs, expanses of snow and electric light was known to be injurious to the eye, and therefore a tinted glass combining good obstruction to heat radiation and to ultraviolet rays was the best to aim at. He had produced glasses which cut off over 90 per cent. of heat radiation, which were opaque to the invisible ultraviolet rays, and were sufficiently free from color to be capable of use as spectacles. Several glasses of the type described were demonstrated to the society, showing how a neutral tint could be produced by making use of both cobalt and nickel. In the course of the discussion that followed attention was drawn to the influence of potassium in glass in modifying the colors caused by the admixture of nickel oxid.

PARIS LETTER

(*From Our Regular Correspondent*)

Paris, Nov. 28, 1913.

Dedication of the Monument to Professor Dieulafoy

November 23 the monument in memory of Professor Dieulafoy was dedicated at the Hôtel-Dieu, and placed at the entrance of the Trousseau Amphitheater where Dr. Dieulafoy taught for many years. Dieulafoy's favorite pupil, Professor Widal, in an interesting address retraced his master's glorious career as a scientist and teacher.

Admission of Women into Administrative Offices of the Public Charities

The *Journal officiel* publishes an important circular addressed by the minister of the interior to the prefects with regard to the employment of women in the administrative offices of the public charities. Women are going to be necessary in the administration of the laws, which are about to become effective, with regard to aid to large families and to women in childbirth. The last-named law makes the giving of aid conditional on the observance of prescribed conditions with regard to rest and hygiene. Moreover, it especially favors mothers who during the period of aid nurse their children themselves. It is undeniable that women would be much better qualified to see that these conditions have been observed as far as is compatible with the demands of domestic life. While the aid of women is particularly desirable in this connection, the minister wishes to see it extended also to hospitals, where competent and well-instructed women can give very valuable services with regard to the management of the establishment, quality of the linen, cooking and improvements in the quarters reserved for women and children and in maternity services.

Kneading Bread by Machinery

The law subjects a baker to higher taxation if he installs a kneading machine. At the last session of the council on hygiene, the question of the taxation of bakers was taken up and a resolution was passed that bakers who used kneading machines should not be more highly taxed than those who used hand kneading. Such a tax is unjust because bakers who use machinery bring about two important improvements: In the first place, they are able to furnish their customers clean bread, free from the impurities introduced by hand kneading; and in the second place, the change is favorable to the health of the journeymen bakers, since the kneading is the most health-endangering part of the work.

The Inventor of the Steam-Engine a Doctor of Medicine

The real inventor of the steam-engine was Denis Papin, who was born in Blois in 1647. James Watt and the others who perfected the engine only developed the ideas of Papin, who was the first to recognize the elasticity of steam. The name of *marmite de Papin* (Papin's kettle) is still applied to a thick kettle furnished with a valve which is hermetically closed by a weighted lever. When the interior pressure of the steam becomes sufficient, the valve opens. Papin first applied this principle to culinary uses. Meats were quickly and cheaply cooked by this apparatus. M. Charles Nordmann, astronomer at the Observatory of Paris, has rediscovered Papin's work, published in 1682, which bears as its subtitle: "Machine Invented by M. Papin, Doctor of Medicine." Papin was a physician and took his degree at the University of Paris.

Celebration of the Twenty-Fifth Anniversary of the Pasteur Institute

The twenty-fifth anniversary of the Institut Pasteur was celebrated November 13. Speeches were made by the President of the Republic and other notables. Dr. Roux, director of the Pasteur Institute, in his speech, showed how the combined force of creative imagination and rigorous experimental methods permitted Pasteur to found a new branch of chemistry, to solve the question of *spontaneous generation*, and to illumine the mystery of fermentations and of infectious diseases. Not being a *physician, Pasteur* hesitated long to take up the subject of infectious diseases and perhaps never would have done so if the great chemist Dumas had not influenced him to seek for a remedy for the silkworm disease which was ruining the silk industry. Pasteur, encouraged by his success with the silkworm disease, took up the study of contagious diseases of the higher animals, and from 1880 to 1885 made a series of remarkable discoveries: the attenuation of virus, vaccination against anthrax and the preventive treatment of rabies. *The application to man of the antirabic* treatment aroused enthusiasm. The Académie des Sciences *undertook to raise a public subscription for funds to build an institute where Pasteur could* pursue his researches and apply his discoveries. Such was the origin of the Institut Pasteur, which I have mentioned in a previous letter (The Journal, Oct. 4. 1913, p. 1307).

Presence of the Spirochaeta Pallida in the Blood of General Paralytics

Dr. C. Levaditi has undertaken the investigation of the question whether syphilitic *infection* in general paralytics is limited to the *brain or if it is diffused through* the blood and the various organs with accidental localization in the cerebral cortex. November 10 he read before the Académie des sciences the results of his researches in *collaboration* with Dr. Danulesco. The blood of a general paralytic at the third stage, syphilitic fifteen years, was inoculated into the scrotum of a rabbit; at the end of 127 days there was a bilateral scrotal lesion. Ultramicroscopic examination showed many characteristic mobile spirochetes. The striking feature is the persistence of the parasite in the blood long after the beginning of the syphilis—fifteen *years.* Levaditi and Danulesco *had had only one positive* result in six trials (five paralytics *and one tabetic). It seems, then, that the germ does not* exist constantly in the general *circulation.* Perhaps it appears there only intermittently during the phases which precede or accompany the cerebral manifestations.

The Student Locum Tenens

According to the law of 1892 on practice of medicine, a medical student who has finished his course may be authorized, without having taken the examinations, to practice medicine as a locum tenens, but it is *necessary* to obtain an authorization *from the prefect.* A *recent investigation* has shown that many such medical students are practicing without having asked or obtained *authorization from the prefects.* It has also been found that practice has *also been carried on* by foreign students who do not fulfil the conditions required for the state diploma for doctor of medicine, which alone gives the right to *practice* in France, as distinguished from the doctor's diploma from the university. A circular letter has, therefore, been addressed to the prefects, requiring them to *see that the* law is observed.

The Glory of Pasteur

The Académie *française* decided yesterday that the subject of the contest in poetry in 1915 (prize, 4,000 francs, or $800) shall be "The Glory of Pasteur."

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Nov. 21, 1913.

Personal

Professor Roemer of Marburg has been called to Greifswald to conduct the hygienic institute as the successor of Geheimrat Loeffler.

The Struggle Between Krankenkasse and Physicians

Continued expressions of sympathy for their German colleagues are being published from medical societies, medical chambers, and medical faculties. A few days ago the Berlin medical faculty declared its solidarity with the German medical profession. According to newspaper reports, the governments of some of the federal states are endeavoring to influence the highest imperial authority, the office of the interior, to make a new attempt to bring about an agreement between the two parties. I regard this statement as improbable.

Transfer of Destitute Insane from Great Britain

The following agreement has been reached between the German Empire and Great Britain regarding the transfer of destitute insane. Insane who belong in one country and come under the care of public charity in the other country may be *transferred to their native* country on demand of the foreign country, provided that since their last entrance into the foreign country not more than fourteen months have elapsed. This period is reckoned backward from the day on which the request for transfer reaches the government of the native country. The insane are to be transferred *only after* the native government has indicated its *acceptance and designated* the place of transfer.

Coeducation

At the congress for juvenile education held *at* Breslau a few days ago, Professor Cohn discussed the difference of the sexes from his experience in Baden which *in contrast to Prussia and other states of the empire, permits girls to attend* the higher schools for boys. Cohn *sent a number of* questionnaires to the principals of schools with reference to their experience *in coeducation, and discussed the answers* which he had tabulated. Great interest attaches to the replies to the question whether *erotic* relations had developed between the boy and girl pupils. The answers are *overwhelmingly negative.* Cohn believes that this question can be treated with the greatest calmness, for the attraction of the sexes for each other will result in undesirable occurrences whether there is coeducation or not. Objectionable conduct will be quite as rare among coeducated pupils as among those not educated together; indeed it may be said that coeducation may contribute to lessen the tension between the sexes. Cohn draws the following practical conclusions from the collective investigation. Separate instruction *may* in itself be better in view *of the different* objects of *interest* for boys and girls, and even the vast American experience supports this view. In *addition* the *greater readiness* to *fatigue* in girls especially *during the years of puberty, which is not noticed in* boys, indicates the propriety of separate instruction. On the other hand, the objections against coeducation are not so *great that* it should be *forbidden* where *it is desirable, because* the small number of girl pupils does not permit the establishment of special schools for girls.

A long discussion followed the address in which a number of speakers opposed the method of coeducation. It was emphasized that these investigations were conducted on altogether too small material, and had also taken the wrong way to secure facts on which reliable scientific conclusions could be based. More extensive investigations must first be made *before a complete* scientific decision of this question could be *reached.*

Death Rate of the German Empire in 1912

The Imperial Health Office has published the following statistics bearing on the frequency of certain important causes of death from about 400 urban communities. The number born living increased by 0.1 *per cent.* The increase, however, is found only among *illegitimate births* which amounted to 3,209, while the number of *legitimate children born* was 2,577 less. The number of *stillbirths also increased by* 100, which was wholly attributable to the *illegitimate children.* On the other hand, the birth rate had *fallen* from 256.6 per 10,000 in the previous year to 251.2. As a further unsatisfactory circumstance the number of stillbirths per 10,000 children born living amounted in the previous year to 322, but in 1912 to 324. The death-rate has fallen about 8.4 per cent., or 33,178, *in contrast* to 1911, which was very *unfavorable in* this *respect.* The death-rate sank from 16.32 to 14.60 per 1,000 *of population.* Especially the number of deaths in the first *year of life was markedly* reduced, *compared* with the previous year, by *about* 25.2 per cent. As a result the death-*rate compared* with 100 born living fell from 18.9 to 14.1.

As to *the causes* of death, an increase was observed in deaths from whooping-cough of 736, or 22.6 per cent.; from measles and rötheln of 160, or 4.8 *per cent.; from* diseases of the respiratory tract of 562, or 1.1 per cent.; from murder and manslaughter of 116, *or 24.5 per* cent.; from suicide of 443, or 6.9 per cent.; and as a result of accident of 390, or 4.2 per cent. On the other hand, there was a reduction in the number of deaths from gastro-intestinal catarrh and diarrhea, of 30,346, or 51.8 per cent.; from typhoid of 585, or 39.3 per cent.; from diphtheria and croup *of* 1,123, or 16.6 per cent.; from scarlet fever of 259, *or 9.4 per cent.;* from puerperal fever of 83, or 5.8 per cent., and from tuberculosis *of* 725, or 1.7 per cent. The number of deaths from gastro-intestinal catarrh and *diarrhea* in children under a year old diminished *more* than a half, from 49,409 in the previous year *to* 24,129. The excess of births over deaths rose from 9.35 in 1911, to 10.51 in the year of this report.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Nov. 12, 1913.

The Meeting of German Natural Scientists and Medical Men

A few weeks ago Vienna was the meeting place of the eighty-fifth annual congress of the Deutsche Naturforscher und Aerzte, which lasted eight days. More than a thousand papers were on the official list in the thirty-four sections, and more than five thousand members formed the audience. The gathering outgrew its original aim, and it must be said that as in medical literature many superfluous articles are written, so here numerous papers should not have been read, being of insufficient importance.

The analogy between human and mouse cancer was dealt with in a paper by Dr. Frankl of Vienna. Von Hausemann had rejected all conclusions drawn from the observations of cancer in the mouse until proof of the identity of human and mouse cancer was forthcoming. Dr. Frankl's experiments show that there is no essential difference between the cells of the cancers in man or mouse. The difference, which is chiefly histologic and biologic, does not controvert the knowledge gained hitherto from experimental mouse cancer in its bearing on human cancer.

The relations between cancer and infectious diseases was the subject of a paper by Schmidt of Innsbruck. He does not believe in a living virus of cancer. He has found that the rule "cancerous ancestors, tuberculous offspring," and its reverse, "tuberculous ancestors, cancerous offspring," are very frequent. He also finds that the history of cancer patients rarely shows infectious diseases: In 44 per cent. of stomach cancers the "infection index" was 0. This peculiar hyperimmunity of cancerous patients is presented also in a refractory behavior of the organism toward vaccination with cow's lymph. The explanation might be found in the supposition that the serum after infectious diseases contains a relative protecting body against cancer.

The dosage of diphtheria antitoxin was investigated by Schick, Kassowitz and Busatti. They recommend the use of 100 units of antitoxin per kilogram of body-weight, in mild cases, and 500 units per kilogram in severe cases. Repeated injections are unnecessary.

Dr. Mall read a paper on spasmophilia in children. By variations of feeding he succeeded experimentally in producing hyperirritability of nerves in animals, which finally resulted in rachitic changes. He thus could prove the correlation of these two frequent conditions of childhood, and showed also the important rôle played herein by the parathyroid.

Taussig read a paper on endemic goiter in Austria. He showed that out of each thousand recruits presented for admission to the army twenty-nine had to be dismissed for goiter. Taussig believes that water derived from mountains is goiter-producing, by lacking an unknown substance, which controls the equilibrium of the thyroid gland. Free consumption of meat seems to be a very good remedy against this trouble; a vegetarian life seems to promote the goitrous tendency.

One of the most important papers was the report on syphilis and general paralysis by Nonne, who asserts that at present the problem is not yet solved as to who will become tabetic or paralytic and who not. It is certain that both tabes and general paralysis of the insane are true syphilitic diseases. These patients are actively diseased. But it seems that there is a special genus of *Spirochaeta pallida* which has special affinity for the nervous system and produces syphilis of the meninges and the nerves. Even in very early cases one sometimes sees affections of the brain and its covers. These persons are predisposed to fall victims to general paralysis of the insane or to tabetic conditions.

Dr. Hock emphasized the necessity of conserving the first teeth of childhood in order to keep the mouth and jaws in a condition fit to receive the permanent teeth. In some cases it is advisable to remove, after the twelfth year of age, the first permanent molar tooth, which by this time has served its object. This removal gives space for the wisdom-tooth to break through without the usual trouble. Dr. Hock believes that this simple procedure does away with a large percentage of dental caries otherwise so frequent.

The problem of mixing human races with each other was discussed by Fischer, who said that although little experimental work is existing in this field, nevertheless it could be shown that mendelian laws were obeyed. Racial features were just as well inherited as parental general features, and they were often split, but not lost in the grandchildren. In a similar paper Abel showed that as yet there is no single absolute proof known for a real morphologic atavism in animals. The law may be formulated that an organ which in the course of ontology (during development of the genus) has become rudimentary never regains its original strength. Even if later on its presence should be required, it is replaced by an analogous organ.

The metabolism of iron in the body of the new-born was studied by Drs. Langstein and Edelstein (Berlin). They found that within the first week of life the infant loses iron by means of the bowels and that not until later is the metal retained and stored up from the food.

The importance of water in the metabolism of infants was shown by Dr. Lederer. He found that the human (and animal) organism is subjected to a gradual loss of water normally. Children with disturbances of the alimentary harmony show increased contents of water in the organs; also those with the exudative diathesis with their tendency to frequent catarrhs. The disturbance of water metabolism is thus one of the chief sources of disease in childhood (adenoid ring). This investigation proves the correctness of the ancient supposition of "constitution," which now has been placed on a safe chemical-physical base.

Interesting papers were read also at the meeting of the psychologists; one by Kafka of Munich, especially, aroused much discussion. This investigator studied the psychology of animals, and demands that careful attention be paid to this important part of biology, as it offers valuable clues to the understanding of human psychology as well as for general knowledge of the development of conscience. Analogy with human psychology could not be disregarded except for unscientific reasons.

The fight against malaria in Austria was described by Dr. von Celebrini of Trieste. He advised the regular intake of quinin daily during the malaria season, at least 5 grains per dose for adults. Children must be treated too, otherwise the whole campaign is useless. Mechanical protection from *Anopheles* is worthless and costly; best is the destruction of insects, practiced according to their biologic conditions in the affected districts.

Other papers were read on the use of india-rubber for covering warships; the future of our earth; the theories of the tides; the refutation of Newton's law of gravitation; modern methods of stereoscopic photography; paleontology and human development; the color-sense of animals; the tectonic structure of the Alps; the chemical substance used by Hannibal to dissolve the rocks of the Alps, etc. After the congress was over, a large number of visitors remained in Vienna and availed themselves of the opportunity of visiting the medical and scientific institutes of this city.

Marriages

Francis Elsworth Hypes, M.D., Dunreith, Ind., to Miss Lynn Wiltshire of New Paris, O., at Dayton, O., November 24.

William Campbell, M.D., Corona, N. Y., to Miss Minnie Louise Murrell of Rockaway Beach, L. I., N. Y., November 26.

John Godfrey Thompson, M.D., to Miss Frances Lucile Young, both of Helena, Mont., November 26.

Joseph Edward Miller, M.D., Wayland, Mo., to Miss Lela Fern Harris of Sullivan, Ill., November 18.

William Leake Mann, Jr., M.D, U.S.N., to Miss Ann Fegan of Dallas, Tex., November 25.

John Hooe Iden, M.D., U.S N., to Miss Marianna D. Brazill at Portsmouth, R. I., November 22.

Ralph Crissman Brown, M.D., to Miss Marion Phoebe Mills, both of Chicago, December 2.

Orvan Charles Adkins, M.D., to Miss Ruth Emeline Miller, both of Elnora, Ind., November 21.

Frederick V. Burnham, M.D., Detroit, Mich., to Miss Nellie Berg of Boston, November 26.

James W. Thomas, M.D., to Miss Rose Murdoch, both of Nehawka, Neb., November 23.

E. J. Donohue, M.D., to Miss Elizabeth Mueller, both of Antigo, Wis., November 26.

Leo Kessel, M.D., to Miss Evelyn Goldsmith, both of New York City, November 24.

Deaths

John Guerrant Trevilian, M.D. Medical College of Virginia, Richmond, 1861; a Fellow of the American Medical Association; surgeon in the Confederate service throughout the Civil War and at its close brigade surgeon and chief of field hospitals; chief surgeon of the Confederate Home and medical department of the city almshouse at Richmond; died at his home in that city, November 24, aged 73. The medical profession of Richmond met with the Richmond Academy of Medicine and Surgery, November 25, to take suitable action regarding the death of Dr. Trevilian.

Thomas S. Crofford, M.D. Hospital College of Medicine, Louisville, 1876; a member of the Tennessee State Medical Association, and American Association of Obstetricians and Gynecologists; professor of gynecology in Memphis Hospital Medical College; gynecologist to St. Joseph's Hospital and obstetrician to the Memphis City Hospital; proprietor of Crofford's Sanitarium, Memphis; prominent as a surgeon of Memphis for many years; for the last year a resident of California; died at his home in Los Angeles, November 24, from pneumonia, aged 54.

Henry Matt. Winans, M.D. Medical College of Ohio, Cincinnati, 1880; a Fellow of the American Medical Association; a member of the State Board of Education; one of the founders and president of the People's Trust Company, Muncie, Ind.; prominent not only as a practitioner, but as a financier and philanthropist; died in a hospital in Muncie, November 23, from malignant disease of the throat, aged 58. At a special meeting of the Delaware County Medical Society, November 24, resolutions of regret and sympathy were unanimously adopted.

John Howe Clark, M.D. Medical Director and Rear Admiral, U. S. Navy (retired); Harvard Medical School, 1862; who since retirement had lived in Amherst, N. H.; a surgeon of the navy since 1861 and in 1893 appointed medical director and president of the Navy Examining Board; died at his home in Amherst, December 1, from cerebral hemorrhage, aged 76.

Oliver D. Simmons, M.D. Maryland Medical College, Baltimore, 1906; Atlantic Medical College, Baltimore, 1909; a member of the Medical and Chirurgical Faculty of Maryland; president of the Calvert County Board of School Commissioners and twice a member of the House of Delegates; died at his home near Bowens, November 25, aged 45.

Robert Alvin Walker, M.D. University of Wooster, Cleveland, 1879; of West Monterey, Pa.; a Fellow of the American Medical Association and once president of the Clarion County, Pa., Medical Society; a member of the General Assembly in 1905 and 1906; died suddenly while making a professional call in Monterey, November 26, aged 59.

William A. B. Treadway, M.D. University of Michigan, Ann Arbor, 1883; a Fellow of the American Medical Association; formerly a member of the medical staff of the Rhode Island State Hospital and the Givens Sanitarium, Stamford, Conn.; died in the Stamford Hospital, November 18, from pneumonia, aged 54.

William Wright Williams, M.D. Rush Medical College, 1871; Bellevue Hospital Medical College, 1874; said to have been the oldest practitioner of Mattoon, Ill.; died in the University Hospital, Chicago, November 20, eighteen days after an operation for the removal of the prostate gland, aged 66.

Frederic Matthew Helbig, M.D. Bellevue Hospital Medical College, 1890; a Fellow of the American Medical Association and a member of the New York State Board of Pharmacy; died at his home in New York City, November 26, from peritonitis, aged 47.

John Decker Frazer, M.D. University College of Medicine, Richmond, 1902; a Fellow of the American Medical Association, and a practitioner of Danton, Va.; aged 37; was dragged to death by a runaway horse in Orange County, Va., November 26.

Marshall P. Austin, M.D. University of Michigan Homeopathic College, Ann Arbor, 1881; formerly of Minneapolis, Minn., but for about ten years a resident of Medina, Mexico, died in that city, November 20, from pneumonia, aged 64.

Gideon Mitchell Duncan, M.D. McGill University, Montreal, 1871; once president of the Canadian Medical Association; died at his home in Bathurst, N. B., October 5, aged 71.

Gaston Graham Bell, M.D. University College of Medicine, Richmond, Va., 1900; died at his home in Oriental, N. C., November 22.

Gertrude Harper Hammond, M.D. New York Medical College and Hospital for Women, 1867; for more than fifty years a practitioner of Rockland County, N. Y.; died at her home in Spring Valley, November 19, aged 82.

Edward Bowen Finney, M.D. Jefferson Medical College, 1861; of Onancock, Va.; died in St. Joseph's Hospital, Baltimore, November 24, from peritonitis following an operation for appendicitis, aged 77.

George Edmond Baril, M.D. Victoria University, Coburg, Ont.; for twelve years president of the Educational Commission of Hochelaga; died suddenly at his home in Montreal, September 20, aged 54.

George J. Parker, M.D. Western Reserve University, Cleveland, 1847; for many years a practitioner of Lexington, Mich.; died at the home of his daughter in Port Huron, Mich., November 23, aged 90.

Edgar Grove Yowell, M.D. Ohio Medical University, Columbus, 1901; of Newark, O.; died at the home of his mother near Hebron, O., November 4, from pulmonary tuberculosis, aged 39.

Harvey W. Cory, M.D. Hahnemann Medical College, Chicago, 1890; proprietor of a sanatorium in Marion, Ind.; died at his home in that city, November 23, from malarial fever, aged 47.

Miles Dennison Goodyer, M.D. University of Michigan, Ann Arbor, 1868; a member of the Medical Society of the State of New York; died at his home in Groton, November 25, aged 69.

Albert Curtiss Brown, M.D. Bellevue Hospital Medical College, 1873; for fifteen years a practitioner of Chicago; died at his home in North Yakima, Wash., November 6, aged 64.

Louis Prosper La Fleche (license, Maine, years of practice, 1893); a Fellow of the American Médical Association; died at his home in Caribou, Me., September 19, aged 45.

Daniel Webster Bashore, M.D. University of Pennsylvania, Philadelphia, 1865; died at his home in West Fairview, Pa., November 18, from cerebral hemorrhage, aged 78.

Titus E. Yerkes, M.D. Rush Medical College, 1864; a Fellow of the American Medical Association; died at his home in Upper Alton, Ill., November 27, aged 77.

Ash D. Bennett, M.D. Pennsylvania Medical College, Gettysburg, 1860; of Mahaffey, Pa.; died at his old home in Clearfield, Pa., about November 29, aged 77.

George Walke Wallace, M.D. University of Virginia, Charlottesville, 1867; a Confederate veteran; died at his home in Norfolk, Va., November 9, aged 68.

John Windell, M.D. University of Pennsylvania, Philadelphia, 1854; died at his home in Hamorton, Pa., August 5, from cerebral hemorrhage, aged 87.

Harry S. Nolte, M.D. Baltimore University, 1898; a member of the Michigan State Medical Society; died at his home in Reed City, about November 13.

Andrew A. J. Burkett (license, Louisiana); for many years a practitioner of Lafayette Parish; died November 20, from heart disease, aged 64.

Albert E. Staudacher (license, Indiana, 1899); a practitioner since 1865; died at his home in Terre Haute, Ind.; September 16, aged 79.

John Hinton Lowry, M.D. Rush Medical College, 1877; formerly of Sterling, Ill.; died at his home in Reedley, Cal., about November 5.

William Jones (license, Iowa, years of practice, 1886); died at his home in Volga, October 19, from carcinoma of the stomach, aged 70.

E. W. Davidson, M.D. Kentucky School of Medicine, Louisville, 1899, died at his home in Tampa, Fla., November 18, aged 36.

Joseph A. Hatzfield, M.D. Hahnemann Medical College, Philadelphia, 1881; died at his home in Pueblo, Colo., November 14, aged 67.

Charles H. Lee, M.D. Hahnemann Medical College, Philadelphia, 1864; died at his home in Newcastle, Pa., November 12, aged 73.

Calvin McMillin, M.D. Western Reserve University, Cleveland, 1867; died at his home in Cleveland, November 15, aged 91.

Corwin James Steele, M.D. Rush Medical College, 1888; died at his home in Hustler, Wis., November 13, aged 54.

Augustine Catherine Haub, M.D. Boston University, 1893; died at her home in Boston, November 14, aged 53.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

TEXAS GUINAN

Another Fraudulent Obesity "Cure"

Quackery is disreputable and vicious, because, as a rule, it not only defrauds but also trifles with health and life itself. Occasionally there are varieties of quackery that attack only the purse. The Texas Guinan obesity "cure" is one of these.

Texas Guinan is an actress. Her connection with the obesity cure that bears her name is explained briefly in the following news item that appeared in the papers early in August of this year:

> "DENVER, Colo., Aug. 4.—Marjorie Hamilton has been deposed as the light in the lives of fat women who seek to reduce, and a new queen reigns in her stead, the Denver stage favorite, Texas Guinan, according to a telegram received from that young woman to-day.
>
> "The message says she has been paid $50,000 by Walter C. Cunningham, Marjorie Hamilton's husband, and head of the fat reduction bureau, and H. D. Turner of Los Angeles, for the method she says she used in reducing herself from 204 pounds to 134."

Most of The Journal's readers will remember its exposure of "Marjorie Hamilton's Obesity Cure" and the individual who operated it, Walter C. Cunningham. The federal authorities followed up this exposure, and Cunningham and his wife, Marjorie, were indicted by the federal grand jury and later arrested.

A RETROSPECT

To recapitulate briefly: In 1906 Cunningham is said to have served a term of eight months in jail in Minneapolis for fraudulently listing fees when he was "president and manager" of a real-estate business of that city, conducted under various names. After completing his jail sentence, Cunningham, it is said, went to Rochester, N. Y., where he became associated with the Clark-Adkin-Neal syndicate, which has exploited various mail-order medical fakes. At this time he is said to have married Evelyn Burlingame and soon thereafter to have gone to Buffalo, where he started a mail-order business, selling "beauty treatments." The business was conducted in his wife's name. In 1909 Cunningham transferred his operations to Chicago, where, after a brief period of employment with the Currier Publishing Company, he started a mail-order bust-developer and wrinkle-eradicator concern under the name of his wife, Evelyn Cunningham. In 1910 Cunningham sold his interest in this concern and incorporated another one along the same lines—the Della Carson Company—later disposing of this also. In the meantime he was divorced from Evelyn, and on Sept. 19, 1911, married Marjorie Hamilton—the "Calendar Girl"—who, on Sept. 6, 1911, had obtained a divorce from her previous husband, William Kerting. Kerting, according to the newspapers, sued Cunningham for $25,000 for alienating his wife's affections. At the time of his marriage to Marjorie Hamilton, Cunningham had left Chicago and had opened a new establishment in Denver. Here he exploited the "Marjorie Hamilton Obesity Cure," the "Princess Tokio Beauty Company" and the "Cunningham Mail-Order School." The Journal's exposure of these three frauds made them unprofitable, and the next the public heard of Cunningham's activities was that given in the newspaper item reproduced above.

As late as Aug. 5, 1913, the newspapers reported that Marjorie Hamilton was about to get a divorce from Cunningham, charging that this gentleman "did everything mean, even to punching her face." Marjorie, in an interview published in a Chicago newspaper at that time, expressed herself thus:

> "Mr. Cunningham has another scheme now for money making. I'd advise the people who are dealing with him to look out. He has advertised his successes very widely, but he has kept his failures intensely quiet. He is like a balloon that would blow up in a moment if a pin should stick it."

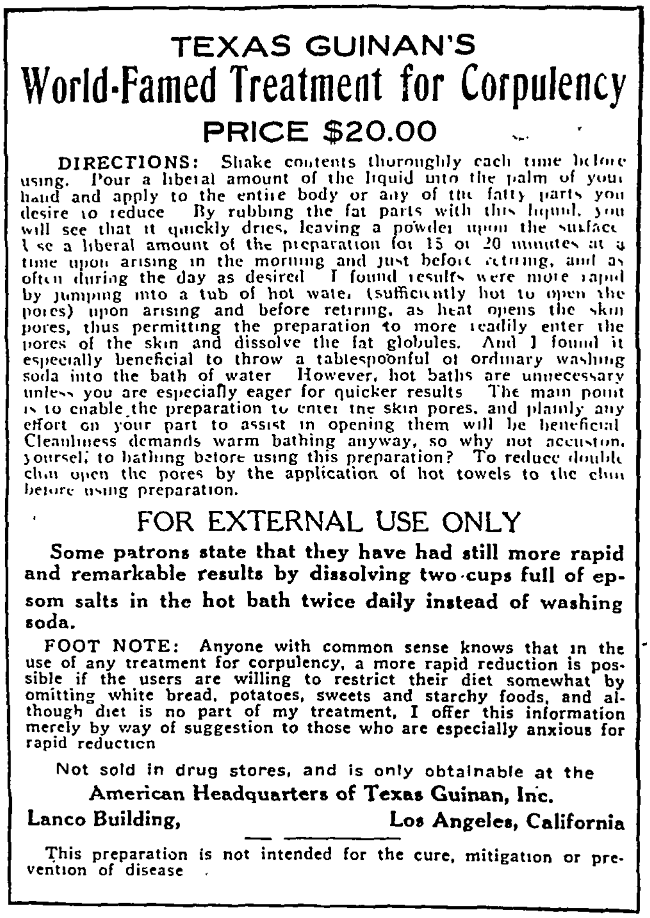
We have, then, historically considered, the following enterprises of Mr. Cunningham:

North American Land Co.: fraudulent real estate.
Evelyn Burlingame: mail-order beauty treatment.
Evelyn Cunningham: mail-order bust developer and wrinkle eradicator.
Della Carson: mail-order bust developer, wrinkle eradicator and fat reducer.
Marjorie Hamilton: mail-order fat reducer.
Princess Tokio: mail-order beauty treatment.
Texas Guinan: mail-order fat reducer.

TEXAS TO THE RESCUE

Texas Guinan comes to the obese public—especially the female portion of it—with this alluring challenge:

> "I have at last, finally and forever, conquered the mystery of harmlessly reducing flesh! I challenge the world to produce any person I cannot promptly take down in weight, and guarantee to make slender quickly."



TEXAS GUINAN'S

World-Famed Treatment for Corpulency

PRICE $20.00

DIRECTIONS: Shake contents thoroughly each time before using. Pour a liberal amount of the liquid into the palm of your hand and apply to the entire body or any of the fatty parts you desire to reduce By rubbing the fat parts with this liquid, you will see that it quickly dries, leaving a powder upon the surface Use a liberal amount of the preparation for 15 or 20 minutes at a time upon arising in the morning and just before retiring, and as often during the day as desired I found results were more rapid by jumping into a tub of hot water (sufficiently hot to open the pores) upon arising and before retiring, as heat opens the skin pores, thus permitting the preparation to more readily enter the pores of the skin and dissolve the fat globules. And I found it especially beneficial to throw a tablespoonful of ordinary washing soda into the bath of water However, hot baths are unnecessary unless you are especially eager for quicker results The main point is to enable the preparation to enter the skin pores, and plainly any effort on your part to assist in opening them will be beneficial Cleanliness demands warm bathing anyway, so why not accustom yourself to bathing before using this preparation? To reduce double chin open the pores by the application of hot towels to the chin before using preparation.

FOR EXTERNAL USE ONLY

Some patrons state that they have had still more rapid and remarkable results by dissolving two cups full of epsom salts in the hot bath twice daily instead of washing soda.

FOOT NOTE: Anyone with common sense knows that in the use of any treatment for corpulency, a more rapid reduction is possible if the users are willing to restrict their diet somewhat by omitting white bread, potatoes, sweets and starchy foods, and although diet is no part of my treatment, I offer this information merely by way of suggestion to those who are especially anxious for rapid reduction

Not sold in drug stores, and is only obtainable at the

American Headquarters of Texas Guinan, Inc.

Lanco Building, Los Angeles, California

This preparation is not intended for the cure, mitigation or prevention of disease

Fig. 1.—Photographic reproduction of the directions on the label attached to Texas Guinan's thirty cents' worth of alcohol and alum. The stuff is purchased on the understanding that no massage, dieting and exercise are necessary!

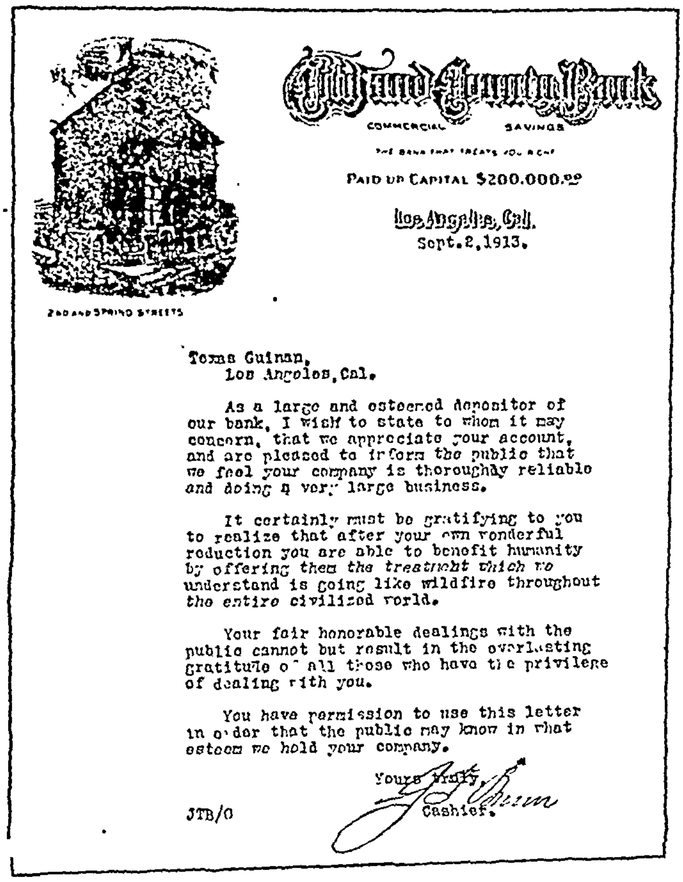
Like most obesity cures of the so-called drugless variety, the Texas Guinan humbug is "entirely different" from anything else! To quote: "It is not like the Marjorie Hamilton treatment—as absolutely different as day from night." Neither, according to Texas, is the treatment anything like the Dr. Bradford treatment, the Dr. Turner treatment, the Susanna Cocroft treatment, the Dr. Kellogg treatment, the Dr. Spillinger treatment, the Burns Belt or Hattie Beal treatment, nor like "Fat Foe," "Fat Off," "Berledets" or the Annette Kellerman treatment.

Texas says she has to laugh when she realizes how much money she squandered "trying the various fat-reducing treatments so heavily advertised by charlatans of the American Medical Association." In fact, she advises her fat sisters, "Tell the quack A. M. A. doctors and specialists to go hang."

THE COMPLETE LETTER WRITER OF QUACKERY

It is an education in quackery to receive a complete set of the advertising matter, follow-up letters, booklets etc., sent out by Cunningham, or shall we say Texas? The booklet which those who answer the advertisements receive, is in itself a gem of impudence and mendacity. It contains various pictures of Texas Guinan in different varieties of stage dress and undress—fat, lean and medium. In it the lady tells how she was about to lose her position because she was getting too fat. "In tights I was a sight at 204 pounds," she says, and publishes a picture to prove it. Mr. Shubert, the theatrical gentleman, we are told, patted her on the shoulder "and led me quietly to the door leading out of the private entrance of his office." Thus cast into outer darkness, she determined to remove her surplus fat; and finally "out of the chaos came an inspiration."

She followed out the "inspiration" and took off 17½ pounds in ten days—we have her word for it! Joy returned! "I was found dancing before the mirror, singing as a full-throated field lark sings at dawn." Day by day, she says, she saw her "limbs that had been so big and ugly and cumbersome regain their lost slimness and beautiful lines;" she saw her "big bust . . . slowly subside back to its original shape"; her abdomen "lost its swollen and unnatural appearance"; in fact, "the days passed like happy dreams." Naturally, she went back to Mr. Shubert, who, with a due appreciation of poetic justice, at once "dictated a contract that made my eyes stick out."



City and County Bank

COMMERCIAL SAVINGS

THE BANK THAT TREATS YOU RIGHT

PAID UP CAPITAL $200.000.00

Los Angeles, Cal.
Sept. 2, 1913.

2ND AND SPRING STREETS

Texas Guinan,
Los Angeles, Cal.

As a large and esteemed depositor of our bank, I wish to state to whom it may concern, that we appreciate your account, and are pleased to inform the public that we feel your company is thoroughly reliable and doing a very large business.

It certainly must be gratifying to you to realize that after your own wonderful reduction you are able to benefit humanity by offering them the treatment which we understand is going like wildfire throughout the entire civilized world.

Your fair honorable dealings with the public cannot but result in the everlasting gratitude of all those who have the privilege of dealing with you.

You have permission to use this letter in order that the public may know in what esteem we hold your company.

Yours truly,
Cashier.

JTB/O

Fig. 2.—Some banks are willing agents of quackery. The City and County Bank of Los Angeles describes as "fair, honorable dealing" a business which sells, under fraudulent claims, thirty-cents' worth of simple drugs for twenty dollars.

A REQUEST FROM A LEAN MAN

Being desirous of finding out all that could be found out about Mr. Cunningham's latest venture, the member of The Journal staff in charge of this department wrote the following letter to Texas Guinan:

> "Dear Madam: Please send me your new book that is free and oblige."

The name signed was one of several assumed in writing for quack literature; no prefix, "Miss" or "Mrs.," was put before the signature. This point is mentioned because, as will be seen later, this short, non-committal, uninforming, unemotional [illegible] from a lean man was to bring a strictly business-like series of heart-to-heart letters from Texas Guinan. "My dear friend" wrote Texas—but let her speak for herself:

> "I am sincerely glad to get personally acquainted with you through your reply to my advertisement. I am positive it is going to prove a friendship that will result in a world of boundless happiness for you, of a deep, sincere unforgetting gratitude on your part for the great, glorious, precious new liberty that will be yours after you have been forever released from the cruel prison of Fat that has so long held you captive; when you will arise in the morning and greet each beautiful new-born day with a glad song upon your lips instead of a sigh; when you will glow from head to foot with a thrilling exultation of becoming slender day by day, actually seeing with your own eyes the superfluous flesh melt away; and instead of the flabby ungainly lines, the new and bewildering grace of youth will steal as if by magic over your entire form."

The "bewildering grace of youth" was an appealing promise—to a lean man of 40—and the enthusiasm of Texas was contagious.

> "Listen, dear friend: I am so wildly enthusiastic over my world-thrilling, perfect and positive fat reducer that I am madly impatient for every fat human being in the universe to get the wonderful benefits of it right away!"

"Madly impatient" is good. Why this mad impatience, may be explained by the following paragraph that occurs a little further along in the letter:

> "I am a woman, and in this thing heart and soul, out of the great joy it has brought me both to be slender and to see all others slender, so if you will fill out the enclosed guarantee order blank and send it at once, with $20.00, there will be sent you immediately under plain cover, the complete guaranteed Texas Guinan positive fat reducing treatment, of which you have never dreamed, and which the world has never before seen advertised in America."

For a paltry $20 Texas was "madly impatient" to send her unfailing treatment! And how simple and harmless it was to prove!

> "With this absolutely unfailing fat reducer, let me firmly impress upon you that you have no internal medicine to take, no nauseous pills, tablets, or powders, no exercise of any kind—not one, no tortuous massage, no masks or apparatus, no rollers, none of the old, moth-eaten, worn-out, silly, senseless, daily self-denial, or third degree methods. I guarantee all this, and on the day you receive the treatment you will yourself be happily aware that you have at last found the only real and rational treatment known to the world's science."

And, after dilating on the evils and tortures of fatness:

> "After the dark hours, dear friend, comes the dawn. This dawn is now for you!"

Then came the peroration and the letter closed:

> "Hoping to receive your $20.00 order as soon as possible, I am, Your Deeply Sincere and Sympathetic Friend, Texas Guinan."

THE SECOND LETTER COMES

Four days after the first letter was received, Letter No. 2 arrived, in which Texas says:

> "I am puzzled! More puzzled than disappointed at failing to get a warmly enthusiastic response from you before now."

She need not have been puzzled, as she failed to allow sufficient time to elapse between the first and second letters for an answer to her first letter to reach Los Angeles from Chicago, even had it been written at the earliest possible moment. Possibly Miss Guinan expected a telegram.

> "Well knowing your inmost yearning, burning desire to be slender, and feeling sure you fully realize my positive treatment will make you so, I even expected your Rush Reply by Special Delivery."

Evidently the trouble lay in the letter sent from The Journal office. It was too confiding, too personal, for Texas says:

> "Truly, from the way you answered my advertisement, I felt positive you were Intensely in Earnest in your great longing to be rid of your fat."

Apparently, too, the once obese actress had read into the letter that was sent her, something that was certainly never intended, for we read:

> "You know there's sometimes a Wireless System of Sympathetic Understanding between human beings. Your letter, strangely enough, filled me with the almost uncontrollable desire to Rush this

Positive Reducer to you at Once; to even take it to you myself; to get on the train and go to you with it and remain with you for several days. . . ."

Evidently on thinking over the matter more carefully, Texas Guinan controlled her "almost uncontrollable desire," and instead of coming to Chicago in person, sent the letter—which was probably just as well. Yet there surely is no doubt that the lady is much in earnest.

> "When I electrified my friends and admirers and all the theatrical world by my quick transformation from fat-girl to thin-girl: When I stunned to speechless Surprise and Satisfaction that Great Manager Mr. Shubert (whose former criticism of my over-weight had stung me to the soul)—when I Dazzled him with my fresh, new, fairy slenderness of figure, my lithe-limbed, small-waisted winsomeness from head to heal [Spelling original with Texas—ED.]—why, dear friend, the Happy Scene it made when I presented myself before him, a New-Born, Superbly Sculptured Being and—Presto, I Stepped Across the Thrilling Threshold of 'Stardom.' Ah, my friend, no change, no scene, can e'er efface, my mind's impression of that time and place."

All of this preliminary to great "offer"; to the "one chance to save $10 on the Texas Guinan Positive Fat Reducer." For a mere $10 it was possible for the more or less cadaverous male who received this letter to get a preparation that, "from the very moment you receive it, There Is No Power on Earth That Can Keep You from Losing Flesh Rapidly . . ." The change that he would undergo would be remarkable:

> "Your chin—throat—arms—abdomen—hips—thighs and lower limbs are immediately destined for almost unbelievable alteration; your enchanting, new and graceful willowness more noticeable every blessed day . . ."

LETTER NUMBER THREE

And with this wonderful promise, Texas closes her letter, from "Yours for New Youth and a New Deal with Destiny." With man-like perversity, even this letter remained unanswered, and as a result, Letter No. 3 came in due time, and in this Miss Guinan became even more personal:

> "Pardon me, dear, you may think me awfully conceited, but I AM a bit proud of what great critics have said in the press about me and my newly made-over form. You, too would be—for we are only women after all—and Beauty and Admiration are a part of our very lives, aren't they, dear!"

Almost uncanny are the powers of Texas:

> "But I can see you in my mind's eye today, Dear Friend, as you really are."

Here we are afraid Texas is mistaken. If she really could see her "dear friend" as he is, she would have instructed her corps of typists to remove his name from the mailing-list and charge up to profit and loss the stationery and postage already expended. Still it was hard to refrain from sending the $10, when for this small sum such a product would be sent.

> "BEHOLD! I believe I have right in my hand a treatment designed to make you Beautifully Sinuous, Fascinatingly Slender and Adorable! I believe I have right in my hand the power to give you back the Glory of Youth's Lithsome Grace, a pliant, peerless, reed-like form."

"Reedlike form" seems particularly good as applied to the recipient of this letter; the only criticism offered is that it should have applied to the present instead of the future. Nevertheless and notwithstanding the fact that Texas closed her letter "with sincere, Sisterly Solicitude," the $10 was not sent.

THEN THE FOURTH LETTER

One might have imagined that after three such pleading epistles, Miss Guinan would feel that she was indeed casting her pearls before swine. But no, Letter No. 4 came strictly on time, with the explanation:

> "As long as you are still among the Piteous Prisoners of Fat, fat-girded, fat-manacled, fat menaced, I cannot find it in my heart to forget you! Really, truly, sincerely, dear, I cannot for the life of me, blot out of my mind, the awful unrest, the dull, desperate unhappiness you must feel!"

As has been surmised, the letter that brought this flood of correspondence from Miss Guinan was not sufficiently impersonal.

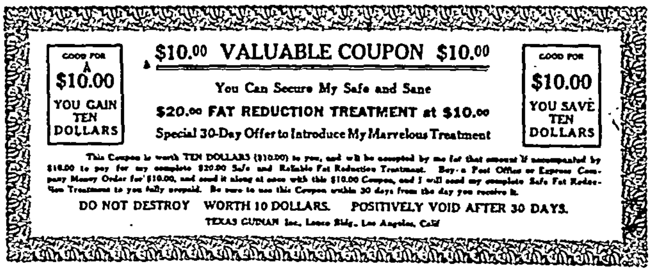
> "Your answer to my advertisement was, in itself, full of pathos to me, for I understood it through and through!"

Unlike the lady in Mr. Kipling's poem, Texas, it seems, did understand, and having understood, exhibits an "all-conquering sympathy for you that makes me forget the sordid money part of it all." She has a "great surprise" that will make it Doubly Easy and Even Profitable for you to grow slender with lightening [More original spelling.—ED.] speed." This is it:

> "Here, my dear, I am making you a most Sisterly Proposition! I could not be more liberal if I were your own flesh and blood!"

The "sisterly proposition" is an offer of the Texas Guinan $20 "obesity cure" for the "small price of $5." All she asks is that you send in "the names and addresses of five fat men or women," which Miss Guinan considers "worth $15." This, the fourth letter, begins to exhibit a spirit of doubtfulness, as though its writer was slowly becoming convinced that the person to whom it was addressed did not think much of the Texas Guinan "obesity cure." To dispel any growing skepticism, we are told that should we stop a moment and reason we must inevitably conclude that every statement Texas Guinan has made regarding her cure "must be true, because my reputation is at stake. I am traveling the country starring in 'The Passing Show of 1912,' backed by Mr. Shubert, America's greatest theatrical manager." And yet we receive signed letters from Texas Guinan from Los Angeles!

> "I would expect to be mobbed at the stage door as I finished my performance, if I deceived the fat burdened folks of America by selling them anything but a high class proven fat reducer."



$10.00 VALUABLE COUPON $10.00

GOOD FOR A $10.00 YOU GAIN TEN DOLLARS

GOOD FOR $10.00 YOU SAVE TEN DOLLARS

You Can Secure My Safe and Sane

$20.00 FAT REDUCTION TREATMENT at $10.00

Special 30-Day Offer to Introduce My Marvelous Treatment

This Coupon is worth TEN DOLLARS ($10.00) to you, and will be accepted by me for that amount if accompanied by $10.00 to pay for my complete $20.00 Safe and Reliable Fat Reduction Treatment. Buy a Post Office or Express Company Money Order for $10.00, and send it along at once with this $10.00 Coupon, and I will send my complete Safe Fat Reduction Treatment to you fully prepaid. Be sure to use this Coupon within 30 days from the day you receive it.

DO NOT DESTROY WORTH 10 DOLLARS. POSITIVELY VOID AFTER 30 DAYS.

TEXAS GUINAN Inc., Lasco Bldg., Los Angeles, Calif

Fig. 3.—This "coupon" gives its recipient the privilege of buying thirty cents' worth of alum and alcohol for only ten dollars!

And whatever you do, do not confuse Texas Guinan's only original fat reducer with anything else you may have heard or dreamed of.

> "All the wafers, pills, powders, miracle dope, rubber jackets, rollers, weakening baths, and willy-nilly what nots, are a hilarious joke to you the moment you begin this treatment and behold with grateful, astonished eyes the marvelous, quick effects."

LETTER NUMBER FIVE

In spite of all this, and much more; in spite of the fact that Texas inscribes herself "Your fond and faithful friend"; in spite of the promise of the "exuberant happiness" that would follow "the magic of this world-bewildering treatment"; in spite of everything, Letter No. 4 fell on deaf ears. Thus it became necessary for Texas to send Letter No. 5. This epistle lacked the fiery enthusiasm of the previous ones, whether because it was signed "Texas Guinan, per H. D. T., Manager," or because in this letter the price of the treatment is reduced to the ridiculously small sum of $3, it is hard to say. "This offer," you are told, "expires twenty days after you receive this letter." Moreover, "this is the last offer that will be made you; after that date the original price will be $20." To get it at this low price it is necessary to "send the names and addresses of ten fat men or women"; further, "it is understood that you will keep sacredly confidential the special $3 offer made you."

THE CURE IS PURCHASED

Finally the money was sent and in due time a package came by express containing "Texas Guinan's World-Famed Treatment for Corpulency." This $20 treatment consisted of a quart bottle filled with a muddy liquid, which on standing separated into a pinkish sediment and an almost colorless liquid. The stuff was analyzed in the Association's laboratory, and as a result of the examination, the chemists' report might be summarized as follows:

To make a mixture having essentially the same composition as the "Texas Guinan World-Famed Treatment for Corpulency," take a quart-size fruit jar and put into it:

Powdered Alum	1 pound
Alcohol	10 ounces
Water, sufficient to make	1 quart

The approximate cost of these materials is 30 cents; selling price, from $20 to $3, according to the ease with which one parts with his money. The chemists' report in detail follows:

LABORATORY REPORT

"One original, sealed bottle (capacity about 1 quart, $20 size) of the "Texas Guinan World-Famed Treatment for Corpulency" (put up by the Texas Guinan Co., Los Angeles, Cal.) was received at the Association's laboratory and subjected to examination.

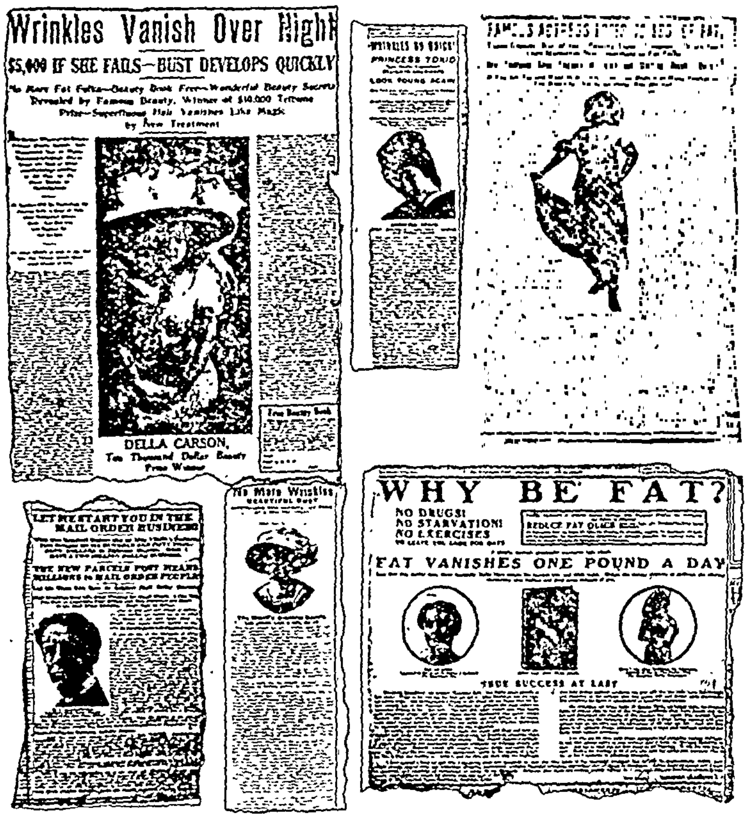

Wrinkles Vanish Over Night
$5,000 IF SHE FAILS—BUST DEVELOPS QUICKLY
DELLA CARSON,
Ten Thousand Dollar Beauty Prize Winner
PRINCESS TOKIO
LOOK YOUNG AGAIN
LET ME START YOU IN THE MAIL ORDER BUSINESS
THE NEW PARCELS POST MEANS MILLIONS to MAIL ORDER PEOPLE
No More Wrinkles
BEAUTIFUL BUST
WHY BE FAT?
NO DRUGS!
NO STARVATION!
NO EXERCISES
REDUCE FAT QUICK
FAT VANISHES ONE POUND A DAY
TRUE SUCCESS AT LAST

Fig. 4.—Photographic reproductions (greatly reduced) of advertisements of some of Cunningham's fraudulent mail-order schemes. In the upper row · The "Della Carson Wrinkle-Eradicator" on the left and "Texas Guinan Obesity Cure" on the right, with the "Princess Tokio Wrinkle-Eradicator" between. In the lower row "Cunningham's Mail-Order School" on the left, the "Marjorie Hamilton Obesity Cure" on the right, and "Evelyn Cunningham Bust-Developer" between.

"The bottle contained a heavy sediment (of light pink color) and an approximately equal volume of almost colorless supernatant liquid. On addition of water the sediment readily dissolved. The sample was highly scented with rose water. Qualitatively, the mixture gave tests for aluminum, potassium, sodium (traces of magnesium), iodid, sulphate, alcohol and water.

"The following quantitative data were obtained: 100 c.c. of the well-mixed preparation weighed 112 gm., equivalent to a specific gravity of 1.12; and 100 c.c. of the mixture contained about 60 c.c. of liquid and 51 gm. of solids.

"Some of the mixture was evaporated to dryness and the water of hydration removed by heating in an oven at 200 C. The aluminum and sulphate content of this dry powder was determined and found to agree closely with the theory for anhydrous aluminum potassium sulphate (alum), $AlK(SO_4)_2$. From the above examination the preparation appears to be composed essentially as follows:

"Alum	50.2 gm.
"Sodium iodid	00.16 gm.
"Alcohol (absolute)	29.65 gm.
"Water (by difference) to make	100 c.c."

NO ALCOHOL LABEL

In spite of the quantity of alcohol present in the mixture, there was no declaration of the presence of this substance, such as is required by the federal Food and Drugs Act.

The label containing the directions for the use of the stuff we reproduce photographically, omitting only a picture of Texas Guinan in tights, and a "special notice" to the effect that the preparation must positively be shaken before using.

Apparently, the world-famed treatment does not always have the same composition. A specimen of it was sent to us by a New York physician. No alcohol or alum was found in this, but instead a solution of gum, probably tragacanth. It seemed to be of the "vanishing lotion" type. Like the other specimen it had a minute quantity of iodid in it. Moreover, the label on the bottle forwarded to us from New York differed slightly from that on the bottle purchased by The Journal. The label on the non-alcoholic, gummy "cure" bore this statement:

> "By rubbing the fat parts with this liquid you will see that it rubs slowly into the pores; continue rubbing until it disappears and until the skin is apparently dry."

The label of the specimen obtained direct was modified thus:

> "By rubbing the fat parts with this liquid you will see that it quickly dries, leaving a powder upon the surface."

AND THEN LETTER NUMBER SIX

One might imagine that after they have parted with $20 or $10 or $5 or $3, as the case may be, Texas would be willing to leave her victims in peace. But, no; a few days after the obesity cure has been received, Letter No. 6 arrives. It begins:

> "This is a letter of grave Warning—heed it, and you should have cause for eternal rejoicing—Disregard it, and you may bitterly Reproach Yourself For All Time To Come!"

The point is:

> "The quantity of reducer sent you must by this time be getting scarce, and I write to warn you about Ordering A New Supply Before It Is Exhausted."

Miss Guinan is really quite concerned about the matter:

> "Not having heard from you with an order for a second supply, I have become a little worried, my dear, that you might make the terrible mistake of allowing the bottle to get empty without taking the precaution of having another one on hand. . . . You are now as one who has climbed three-fourths of the way up the Pinnacle of Happiness—do not falter in your steps, do not hesitate, do not lag, do not doubt or fear."

While the "regular price is $20 a bottle to all the world," Texas is magnanimous again and will let her "dear" have repeat orders "for $4 a bottle, or two bottles for $7, or three bottles for $10." On no account must the "treatment" be interrupted; if continued "you will be magnificently reduced to normal proportions," provided—and this is a gem—"you use the treatment until the cause of your fat is overcome."

Then follows a number of testimonials—addresses omitted—leading up to this whirlwind climax:

> "The Golden Goal, The Sweet Reward Is In Sight; It Is All Up To You! It Is For You, And You Alone, To Choose! Success Or Failure? Which, My Dear? Yours with Affectionate Anxiety, Texas Guinan."

SUMMARY

Those, then, who send $20—or less—for Texas Guinan's "cure" are to rub themselves with a watery-alcoholic solution of alum fifteen or twenty minutes at a time on rising, just before retiring and "as often during the day as desired." It is also suggested that a hot tub be taken twice a day and that white bread, potatoes, sweets and starchy food be omitted from the diet. That by taking hot baths repeatedly, rubbing one self twenty minutes at a stretch at frequent intervals and dieting strictly, one might be able to reduce weight, is evidently true. That Texas Guinan's mixture of alum, alcohol and water has anything whatever to do with the reduction is, just as evidently, not true. In short, "Texas Guinan's World-Famed Cure for Corpulency" is essentially a fraud; as much of a fraud as the "Marjorie Hamilton Obesity Cure" that Cunningham exploited from Denver, or the bust developer and wrinkle eradicator that he sold in Chicago.

At the risk of appearing hypercritical, we reproduce two paragraphs from the order-blank used in purchasing the Texas Guinan "cure."

> "I also buy it with the understanding that it is new and different from any other treatment in the world that you ever heard of being advertised, and that there are no exercises of any kind with it, no dieting of any description, and that I may eat all kinds of foods I desire while taking it.
>
> "And I buy it with the still further understanding that worthless massage is unnecessary, and that in no part of your treatment is there any physical culture of any description, no internal bathing or enemas, no worthless, harmful creams to rub upon the skin or body, that there are no Turkish baths, no apparatus of any kind, no bandages, no belts, no garments, no body-wrecking sweat baths, no medicine, pills or internal stuff to swallow, no special foods and no obesity biscuits—nothing to take internally."

Possibly a mixture of alum, alcohol and water is "new and different from any other treatment in the world," for obesity. It cannot be said, though, that there are "no exercises of any kind," when the purchasers are explicitly instructed to rub themselves for fifteen or twenty minutes at a stretch. The statement that there is "no dieting of any description" and that the person using the nostrum "may eat all kinds of food," is also untrue, in the light of what appears on the label, which suggests a strict diet. A careful reading of the second paragraph given above will show that while many of the statements are technically true, they are essentially false.

It is a sorry commentary on our laws that a man whose business has been essentially one of fraud and deceit for years past, can continue to swindle the public with apparent impunity. The federal authorities took action in the case of Marjorie Hamilton, but as yet have not pushed the thing to completion. The Journal's thorough-going exposure of this particular swindle—and the publicity which the papers of the country gave The Journal article—killed it, financially. All that Cunningham needed to do, however, was to transfer his offices to another state and start up under another name. His stock in trade are impudence and mendacity; his clientele, the gullible. The federal machinery of necessity moves slowly, and it should be unnecessary to invoke federal aid in prosecuting a fraud of this kind. When Professor Samuels, the Wichita quack, attempted to operate his fraud-factory in Detroit, the local authorities took the thing in hand and made Michigan too hot for him. The local authorities of Los Angeles can do the same thing for Cunningham.

Correspondence

The Better Control of Ophthalmia Neonatorum

To the Editor:—In The Journal, Aug. 30, 1913, p. 634, Dr. A. Jacobi, the retiring president, states that "in 108 cases of ophthalmia neonatorum that are reported by various eye clinics, sixty-two patients were attended by physicians, forty-three by midwives, and three by neighbors . . . It so happened that all the cases of total blindness occurred in the practice of physicians." Yet we find that the punitive measures of the proposed bill are directed against the midwife most of all. Truly, there is plenty of material for the lawyer of sporting instinct, keen for employment in any possible claim against the opulent physician and the dividend-paying hospital association, but in the main it is the midwife that is to be regulated.

About six years ago I vainly tried to interest the health authorities of Cleveland in a consistent policy of saving the eyes of the newly-born. Instead, there followed an antimidwife crusade, resulting in jailing a baker's dozen of them—and nothing else. The mountains labored and brought forth a most ridiculous mouse.

Dr. Jacobi well insists on the training of midwives, sweeping aside the childish fears expressed in some quarters that the midwife might eventually compete with the physician. There is not a man in practice but knows that our immigrant citizens and too many others, employed at small wages, have not the means to employ a physician, let alone a nurse subsequent to accouchement; nor do they seem to conform to the American style of restricted families. It is this class of our citizenship which necessarily depends on the midwife. Our place is to bring about a system of training the midwife, not to jail her.

Whether or not the employment of a general practitioner as an accoucheur would eliminate ophthalmia neonatorum is a question that remains unanswered. My observation and experience do not incline me to an affirmative opinion. Abroad, especially in the rural districts, and in the city slums, where according to the tabulated returns of vital statistics, more than 75 per cent. of all confinements are assisted by midwives, not a single eye is lost from the disease. Here enters, too, a matter of professional difficulty—ethics, I had almost said. Take the busy physician, with a long calling-list. Attending, among others, a patient with scarlet fever, diphtheria or erysipelas, does he invariably take the time, granting the inclination, to bathe and to change his attire completely before calling on his next patient in what may perhaps be a confinement case? Is it not possible that contagion is carried in this way? It is well that we do not know! What we do know is that many a busy physician, impatient at the delays of natural childbirth, resorts to artificial aids; and again we should account ourselves fortunate in failing to know what damage accrues to the patient because of our "advanced" knowledge and dexterity.

Every reader knows that with all her antiquated ways Europe has but a tithe of women suffering from the diverse female troubles to which America is heir, and that our daily diet of laparotomies and exsected ovaries, by selfstyled "surgeons," is a rarity on the other side. This condition is almost entirely due to the employment of the midwife, educated and trained in her special work, supervised by competent practitioners, and, above all, grounded in the elementary instruction that on no account may she pass beyond the limits of her sphere, being specifically directed to call the physician at the first symptom of any abnormal condition. This course, while inuring to the immediate rectification of any trouble, automatically settles the fear of possible "competition."

What a splendid corps of midwives might be produced in America under proper conditions! Our women, intelligent, quick to learn and to observe, pliable to training and conscientious in their work, would make splendid material, while the prominence and responsibilities attaching to the work would raise it in the public opinion as one most desirable; yielding, at the same time, sufficient remuneration without imposing great burdens on the poorer among our citizenship. Such a step, it may well be believed, would settle the matter of lying-in homes and hospitals.

Finally, inasmuch as most of the victims of ophthalmia neonatorum come from the slums, and in view of the fact that the disease is the result of the ignorance of parents or prospective parents, I have long been convinced that appropriate instruction by way of public lectures and in other ways will almost wholly eliminate this crime against humanity.

There remains a word to be said about Section 4, Article 3, in the proposed bill, prepared under the auspices of the Council on Health and Public Instruction of the American Medical Association (The Journal, June 21, 1913, p. 2004), providing for the gratuitous distribution by the state board of health of a scientific prophylactic to physicians. There is no physician who would grudge the few pennies for investment in a bit of silver nitrate, while, on the other hand, the state should not be put to a considerable expense for purchases of medicine, packing and mailing. But that is an insignificant matter in comparison with the importance of the bill itself.

James Stotter, M.D., Cleveland.

Convenient Rule for Dividing Doses

To the Editor:—I wish to submit a method which will save the doctor and nurse a good deal of time in administering drugs. If the physician wishes to divide a dose, such as a tablet containing a fraction of a certain weight (grain or gram) so as to give a smaller fraction, the following rule may prove convenient: Dissolve the larger dose in as many volumes of water (minims or cubic centimeters) as equal the denominator of the smaller fraction and give of this solution a number of volumes (minims or cubic centimeters) equal to the denominator of the larger fraction. Thus, if we have ⅛-grain tablets of morphin sulphate and wish to give 1/64 grain, we measure 64 minims of water, in which we dissolve the ⅛-grain tablet. Then by taking 8 minims for injection we give the required 1/64 grain.

Michael S. Aaronson, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MARSDEN'S PASTE IN EPITHELIOMA

To the Editor:—1. Please give the formula of Marsden's Paste.

2. How often usually should it be applied to an epithelioma of ordinary size, one, for instance, as large as a small chestnut? How should it be applied, and how often, or do conditions of the neoplasm determine these points?

3. Why could I not use it on an epithelioma of the ala of the left nostril of an old man? This growth is about the size already mentioned and is getting larger. It is causing no discomfort. There are no metastases and the growth appears to be absolutely local. The patient cannot avail himself of opportunities which are not here, as radium, etc., and prefers to avoid the knife if possible.

Frank P. Norman, M.D., Greenville, Ga.

Answer.—1. Marsden's paste consists of powdered acacia 1 part and arsenious acid 1 or 2 parts by weight, which are mixed at the time they are to be used with enough water to make a paste of the consistency of a firm ointment. If deep destruction of the tissue is necessary it is better to use the stronger mixture. If the lesion is relatively shallow in comparison with its area, the mixture of equal parts of arsenious acid and acacia is sufficient. In ulcerating lesions the stronger paste is preferable, because the eschar is formed more quickly and limits the absorption of arsenic.

2. The paste is applied in a thick layer over the area to be destroyed, and should extend beyond the apparent border of diseased tissue. It should be left in position until a white eschar is produced; this requires from eight to twenty-four hours. After the eschar forms, it should be dressed surgically. The slough will separate in from five to seven days, and if the treatment is properly carried out there remains a healthy granulating wound which heals in about a week and leaves a relatively small scar. After separation of the slough and healing of the wound, if any areas of epithelioma remain the treatment can be repeated as at first. Nodules of epithelioma that are covered by epidermis must be denuded by the curet or caustic potash or some similar agent before the application of an arsenic paste, for arsenic does not destroy horny epidermis.

3. If it is going to be used on an exuberant tumor on the ala nasi, such as described, the excess of epitheliomatous tissue should first be curetted away and the paste applied as above described to the base. It is probable that the layer of healthy tissue under the epithelioma is thin, if the tumor has not involved the entire thickness of the ala nasi, so that the ala nasi will probably be destroyed in the procedure.

In proper cases epitheliomas can be destroyed radically by such a paste, but it, is not a method of preference in most cases and should be undertaken with caution.

DELAFIELD'S HEMATOXYLIN—EHRLICH'S ACID HEMATOXYLIN

To the Editor:—Please give methods of preparation of Delafield's hematoxylin and Ehrlich's acid hematoxylin.

W. H. Enders, M.D., Jackson, Mich.

Answer.—The methods of preparation are as follows:

Delafield's Hematoxylin: To 400 c.c. of saturated solution of ammonia-alum (that is, about 1:11 of water) add 4 gm. of crystallized hematoxylin dissolved in 25 c.c. of strong alcohol. Leave it exposed to the light and air in an unstoppered bottle for three or four days. Filter, and add 100 c.c. of glycerin and 100 c.c. of methyl alcohol (CH_4O). Allow the solution to stand (uncorked) until the color is sufficiently dark, then filter.

Ehrlich's Acid Hematoxylin: Water 100 c.c., absolute alcohol 100, glycerin 100, glacial acetic acid 10, hematoxylin 2 gm., alum in excess. Let the mixture ripen in the light (with occasional admission of air) until it acquires a dark red color. It will then keep, with constant staining power, for years, if kept in a well-stoppered bottle. It is very appropriate for staining in bulk, as overstaining does not occur.

LIABILITY FOR MEDICAL AND SURGICAL CARE OF PAUPERS IN ILLINOIS

To the Editor:—Can you give me information in regard to the Illinois laws on the medical and surgical care of paupers and near paupers? What are the duties of the township supervisors (overseers) in providing county help for sick paupers in the rural districts of Illinois where no regular county physician is appointed?

T. A. J., Illinois.

Answer.—Chapter 107 of the Illinois Revised Statutes, Paragraph 1732, provides that relatives of any pauper are first liable for his care, which would include necessary medical and surgical treatment. By relatives are meant children, parents, grandparents, cousins, uncles, aunts, etc., the nearer relatives being liable first. In case a township supervisory or overseer employed a physician to attend the pauper, the physician might present his bill to the overseer who would notify the court, and the relatives, if able, would be compelled to pay for such services. In case they were unable to pay, the physician's compensation would come from the township or county poor-funds.

PRIVILEGED COMMUNICATIONS IN ILLINOIS

To the Editor:—I keep my account on one side of a sheet of paper and the case report on the other. I have seen a statement to the effect that accounts kept in this manner cannot be used in court in an attempt to collect, because of the fact that the record of the case would be considered a privileged communication. What is the status of this matter?

P. E. B., Illinois.

Answer.—There is no statute in Illinois covering the question of privileged communication between physician and patient. By the common law, the rule of privileged communications applies only between lawyer and client and such rule must be created by statute in all other relations. (See Wigmore on Evidence, Paragraph 2381, *et seq.*) In states having such a statute covering the relation of physician and patient, it might apply to an account of the character above defined, but it would depend on the interpretation of the court.

EARLY DEMONSTRATION OF WASSERMANN REACTION

To the Editor:—1. How soon after the initial lesion of syphilis is a Wassermann demonstrable?

2. Is it true that a Wassermann is negative until after the secondary stage?

J. B. Spalding, M.D., Kenosha, Wis.

Answer.—1. The reaction has been observed five days after the appearance of the initial lesion and can be elicited in a majority of cases after the lapse of fifteen days.

2. No.

ELLIOT'S OPERATION FOR GLAUCOMA

To the Editor:—Please describe Elliot's operation for glaucoma.

J. T. Little, M.D., Pittsburgh, Pa.

Answer.—Lieut.-Col. R. H. Elliot, of the (British) Indian Medical Service, Madras, a recent visitor to America, has revived (since 1909) and much improved a half-forgotten method of trephining the sclerocornea for the relief of increased tension in the various forms of glaucoma. Fergus reported the operation a little earlier than Elliot, but he has not had the wide experience of the Anglo-Indian, who has probably evolved a better procedure. Dr. Elliot has written a practical little work on the subject; in it he describes his operation which, in brief, is as follows: The operation may be performed under the local influence of cocain and epinephrin dropped into the sac.

The patient looks down, and a large triangular flap of conjunctiva is dissected up from above the cornea, the attached base of the triangle lying at the sclerocorneal margin. Experience has shown the importance of dissecting this flap right up to the limbal attachment of the conjunctiva. The flap is turned down on the cornea. The spot selected for the trephining should be in the cornea as much as possible, and should be prepared by using the scissor points freely, either cutting or scraping or both, right down to the scleral coat. It is important that no conjunctival tissue be left; otherwise it will catch in the trephine and tend to draw the flap into the latter as it is working. The operator should never pull on the flap, but simply steady the globe by pressing on the cornea through the down-turned flap. This is sufficient to keep the eye at rest and in the proper position. The trephine is used with quick, light movements, and care is taken that its first application suffices to bite into the sclera, before it is raised to see the progress made. Once a clean ring is thus started, it is easy to replace the trephine in it. As soon as the anterior chamber is tapped, aqueous fluid wells up alongside the trephine; even apart from this, there is a curious sucking sensation which tells one the trephine is through. Moreover, the patient often helps, by a slight movement due to the pain (seldom severe) which attends the completion of the section. The conjunctival flap is replaced *in situ* to see whether or not the iris is in position. If it is, and if there is no bulging of its base into the wound, the eye is at once closed. It sometimes happens that the iris bulges into the section the moment the disk is cut through; if so, it is snipped with scissors to let the aqueous fluid escape, and it then often goes back of itself. If it does not, then an iridectomy is performed. As a rule, a very small and peripheral section of the membrane suffices; more rarely it is necessary to make the iridectomy complete. It is well to instil physostigmin (eserin) drops into the eye after operation, if for any reason it is feared that a prolapse may take place. As a rule, no drops whatever are used immediately after the operation.

Elliot has somewhat modified his early operation by continuing the elevation of the tissues into the clear cornea—splitting the latter with a dull paracentesis needle or similar instrument—and he places emphasis on entering the trephine so that the corneal section shall be first made and a little hinge of tissue be formed toward the sclera. This hinge and the iris periphery may often be cut through by one snip of the scissors.

CONTAGIOUSNESS OF SMALL-POX

To the Editor:—Please answer the following questions:

1. At what stage of the disease is small-pox most contagious, or is it contagious at all stages of the disease?
2. How contagious is the exfoliated material?
3. Is the expired breath contagious through all of the stages of the disease?

L. P. Barbour, M.D., Rocky Ford, Colo.

Answer.—1. Small-pox is contagious from the earliest active stage to the end of convalescence, and possibly even during the stage of incubation.

2. The exfoliated matter is very contagious and very tenacious of its infectivity. Its vitality is retained after the patient's death, and the room occupied by a patient, the bedding and articles of furniture all serve to convey the disease unless thoroughly disinfected.

3. Probably.

EFFECT OF CUTTING THE VAS DEFERENS

To the Editor:—Please state whether or not cutting the vas deferens affects sexual desire.

J. A. Boyer, M.D., Carmi, Ill.

Answer.—The effects of cutting both vasa have been extensively observed in men as well as in animals. Observers are agreed that no perceptible change in sexual desire or power results therefrom. This conclusion accords with the familiar clinical observation that occlusion of both ducts through bilateral gonorrheal epididymitis does not in the least impair the subject's sexual desire or power. He does not even suspect any genital irregularity until search for the cause of the wife's failure to conceive reveals the absence of spermatozoa from the semen.

SUBSCRIPTIONS FOR FOREIGN JOURNALS

To the Editor:—Please inform me if there is a place in America where one can subscribe for the *Wiener klinische Wochenschrift*, and also the price of the annual subscription.

J. Curtis Lyter, M.D., Moberly, Mo.

Answer.—The prices for subscriptions to all the exchanges listed in our Current Medical Literature Department were given in the Index Number of The Journal, June 28, 1913, p. 2097, and will be republished with the Index, December 27 next. The *Wiener klinische Wochenschrift* is there given as costing 24 marks a year. This is about $6, plus postage.

Advertisements of persons who make a specialty of taking subscriptions for foreign journals appear in nearly every issue of The Journal.

COLLOIDAL PALLADIUM

To the Editor:—A physician here told me that he saw in The Journal a short time ago an article on the increasing of oxidation and the absorption of adipose tissue by the use of a Colloidal Palladium (he was not certain about the name of the metal used). Can you give me the number of The Journal containing the article described?

Lydia Allen DeVilbiss, M.D., Fort Wayne, Ind.

Answer.—Colloidal Palladium (Leptynol) was introduced by M. Kauffmann (München. med. Wchnschr., 1913, lx, 525, 1260), who states that it is related to the platinum group. The author performed experiments on himself and used the substance in other cases, he claims, with success. No other reports concerning this substance are available. It is apparently one of the many thousand proprietaries produced abroad in the past year and put on the market after meager experimental work.

LITERATURE ON FIELD HOSPITALS

To the Editor:—Please refer me to literature giving plans for field and camp hospitals, and describing how they are conducted.

J. A. Rosenberger, M.D., Big Creek, Cal.

Answer.—Following are references to recent articles on field hospitals:

Baketel, H. S.: Field Hospitals in Peace and War, *Mil. Surgeon*, November, 1913.
Reno, W. W.: Proposed Method of Pitching and Striking a Field Hospital rapidly, *Mil. Surgeon*, April, 1913.
Boaz, J. J.: Hospitals in the Field, *Mil. Surgeon*, November, 1910.
Lovering, P. A.: The Hospital Camp at Norfolk, Va., *U. S. Nav. Bull.*, October, 1909.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

HEALTH DIRECTION IN THE PUBLIC SCHOOLS

C. P. McCord, Medical Inspector of Schools at Albany, N. Y., in a paper read before the Fourth International Congress on School Hygiene at Buffalo, says that we are living in the renaissance of science as applied to society. Interest in the growing child is manifested in laws concerning child-labor, infant-welfare work, school medical inspection and school nurses. Compulsory education has placed approximately twenty million children under a daily routine in the schools which is often far from being conducive to good health and normal development. Modern medical inspection in the schools dates back nineteen years, but its importance in our educational system is constantly increasing.

McCord believes that school medical inspection constitutes a specialty as much as laryngology or otology, but so far only two American medical colleges offer courses on social pediatrics in connection with instruction in the diseases of children of school age. In view of the great extension of school medical inspection there is a great need of well-trained physicians along this line. McCord believes that full-time men should be employed, preferably those having some experience as executives in school work, together with a first-class medical training with a knowledge of the elements of the specialties. They should have a fair outlook on pedagogic and sociologic problems, and should be paid adequate salaries. To afford the best results there should be a sufficient number of nurses to insure a daily visit to every school, which would mean one nurse to about fifteen hundred children. Adequate records should be kept. A good working reference library along medical, psychologic and sociologic lines should be provided.

McCord says that the medical officer should in no way usurp the privileges of the family physician. Much of the opposition to school inspection arises from the profession itself, and this is a greater drawback to effective work than is the opposition of parents to what they often believe to be an infringement on their rights as parents. It is the duty of the medical director always to refer cases to the family physician, who in necessary instances will refer them to a proper specialist. The opposition of the profession to a medical director in the schools arises from the fear that he will favor particular physicians or that he will treat or suggest treatment. The proper understanding of the aims of a well-equipped medical director will dispel this idea. The full-time man removes the danger that the inspector may "work" his position to increase his private practice.

When medical inspection is part of the educational system the question of the relation to the local board of health arises. Most cordial relations should, of course, exist, but it is chiefly the acute contagious diseases among schoolchildren which will fall under the authority of the board of health. In Albany, where McCord is director, the plan is that all such diseases are reported by telephone to the board of health, and in turn each morning the office of the medical inspector receives the report of all such cases known to the board of health.

McCord says that in view of the recent researches on measles and scarlet fever, the question arises as to whether or not the period of exclusion for these diseases might not be shortened materially. In the matter of diphtheria he believes that there should be a more rapid enforcement of the new rule requiring for release two negative cultures on two successive days. McCord's suggestion for lessening the spread of diphtheria would be to make cultures of every sore throat, and in instances in which a case of diphtheria develops to culture at once the throat of every child in the class and exclude the carriers.

The five chief highways to health in the public schools are medical inspection, school hygiene, personal hygiene, physical training and welfare work; and in the department of school inspection in Albany, as organized by McCord under the statute of New York making medical inspection of schools compulsory, the foundations have been laid for effectively carrying out these five requirements. The system was initiated in March, 1913. A laboratory has been established with facilities for complete medicopsychologic examination of backward children, and special classes have been provided for such children. An important feature of medical inspection is the work of the nurses. In Albany the city has been divided into districts with a nurse in every district. Every school receives a visit every other day. Acute or contagious diseases are first dealt with and the other children are thus protected. After these cases are attended to, routine examinations for physical defects are made and parents are notified, with the request that the child in question be taken to the family physician.

As to the practical results in Albany, since April, 1913, forty-eight operations have been performed by Albany physicians for the correction of physical defects. Over 50 dental treatments have been secured, 150 children have been provided with eye-glasses and hundreds of children with contagious and parasitic diseases have been excluded until cured. The inspections have shown defective vision in 20 per cent., enlarged tonsils in from 6 to 12 per cent., nasal obstructions in from 12 to 20 per cent., decayed teeth in from 50 to 80 per cent., nervous disorders in from 5 to 20 per cent., orthopedic defects in 20 per cent., skin diseases in from 1 to 15 per cent., mental defects in from 1 to 2 per cent., and defective hearing in from 2 to 5 per cent. One great object of the medical inspection is to place the responsibility with the parent for obtaining advice from the family physician. An interesting feature of the Albany plan is the blank for recording the medicopsychologic laboratory examination, which includes the history, examination, and sociologic, psychologic and educational data.

THE PUBLIC HEALTH SITUATION IN ATLANTA

Atlanta, Ga., is a progressive and rapidly growing city of 175,000 inhabitants. The public-spirited citizens composing the Chamber of Commerce of Atlanta, recognizing that the health of a city is its greatest asset and one of the requisites for attracting people and industries, made provisions for a survey of the public-health situation. This survey was conducted by the Department of Surveys and Exhibits of the Russell Sage Foundation, which has recently made its report. This report in many of its features, in which health conditions in Atlanta are criticized, would undoubtedly apply to most of our cities. It is therefore not to be considered purely as a criticism or condemnation of conditions in Atlanta, but rather as a valuable guide to the improvement of health conditions generally. That, of course, was the end sought by the citizens in obtaining this survey.

One of the first features of the report is that of preventable diseases, from which it is shown that 15.6 per cent. of the whole mortality (about 3,000) of the city in 1910 was due to eight well-known infectious diseases which are generally admitted to be preventable. Adding four other diseases, diarrhea, meningitis, pneumonia and puerperal fever, which are probably preventable under ideal conditions, the total deaths (1,042) from preventable diseases was 35.5 per cent. of the total mortality.

Inasmuch as the prevention of such diseases is one of the chief functions of the health organization, the report discusses the present organization of the health board of Atlanta. The board of health consists of ten members. This board directs the work of two separate organizations, the division of sanitary inspection, which is occupied with the collection and disposal of garbage, cleaning of streets and the engineering aspects of health work, and the department proper, which is in charge of a health officer hired and directed by the board. The board maintains a laboratory, a detention hospital for contagious diseases and a tuberculosis sanatorium, and is engaged in the registration of vital diseases, the control of communicable diseases, milk and dairy inspection, meat and market inspection, mosquito reduction, plumbing inspection and medical relief to the poor. The appropriation for carrying on this work is $80,000 yearly, which is less than 23 cents per inhabitant per year, which the report regards as considerably below the minimum requirement for a modern effective department. This is the great criticism which applies to practically all municipal health departments at present.

The system of reporting vital statistics is criticized not because it is inadequate, but because of lax enforcement. It is said that births must be reported promptly if any baby-saving work is to be attempted, and that deaths should be reported not only promptly but with accurate and adequate information. Examination of 349 death certificates filed during May, 1913, showed the statement of cause to be satisfactory in only 181. The remaining 168, or 48 per cent., were found to be incorrect, incomplete or indefinite, which, as the report says, is not only in violation of the law, but is a testimonial of ignorance and carelessness which is a serious reproach to the local medical profession. This comment again would apply to almost any other city.

Criticism is made that measles, whooping-cough, erysipelas, chicken-pox, typhus fever and pellagra, which were formerly reportable, were dropped in 1911 from the list of reportable diseases at the suggestion of the Fulton County Medical Society. Diphtheria, scarlet fever, small-pox and cerebrospinal meningitis are reported satisfactorily, but typhoid fever and tuberculosis are said to be reported in only about half of the cases. Only a few of the typhoid patients are visited and no steps are taken to follow up tuberculosis. Diphtheria patients are released ten days after the disappearance of the clinical symptoms, and attention is called to the fact that it is a better practice to release only after two successive negative cultures. Laboratory diagnosis in tuberculosis and diphtheria is offered by the department, but the work is hampered by the lack of funds, and it is said that the city neglects a definite opportunity to purchase public health.

Milk and dairy inspection is likewise provided for in a comprehensive ordinance covering inspection of dairy farms, depots, etc., and prescribing milk standards and proper temperature and bacteriologic standards; but only two dairy inspectors, one bacteriologist and an assistant are provided, which is an entirely inadequate force for the work to be done.

Meat and market inspection is commented on in the report, although no provisions are made for the chemical detection of adulterations of food.

Mosquito reduction is fairly well provided for, but the health officer believes that a larger sum of money could be profitably spent.

The criticism is made that nearly one-sixth of the department's appropriation is spent on plumbing inspection, which is a matter now considered to have slight hygienic significance, and it is said to be unfortunate that twice as much is spent on this department as for the control of communicable diseases.

In referring to the defects in the present organization of the board, it is said that the board's system of health-department control is a relic of the days in which health work was largely a matter of nuisance abatement and emergency steps in the face of epidemics of small-pox, etc. Public-health work has become technical and it is now considered wiser to hire a competent specialist in public-health work. The problems of disease and statistics are beyond the field of experience of the members of the board.

It is also pointed out that the sanitary division carries on certain work which properly belongs to the health department, such as the supervision of privies and dry closets, which is work of distinct hygienic importance, as is that of the inspection of private wells, a service now entirely omitted.

Among the "neglected opportunities" considered in the report is that of lessening the death-rate among infants under 1 year of age, of which there were 521 in Atlanta in 1910. In other cities this problem has been attacked by requiring proper reporting of births and the visiting of cases by health department nurses. Midwives are examined and regulated, and infant-welfare stations are established in congested districts which supply pure milk and cheap ice. Atlanta has not taken any of the above-mentioned steps, but a number of private organizations have been carrying on this work on a limited scale.

The restriction of tuberculosis, it is stated, offers another of the largest opoprtunities for health improvement. In Atlanta, many of the elements of a well-rounded program for the improvement of conditions with regard to tuberculosis are present, but they need to be brought together and augmented. The health department receives reports of cases (though only partially complete) and maintains a sanatorium, and the antituberculosis society maintains a clinic, investigates cases and furnishes certain nursing facilities. The cooperation between these two organizations is not close enough.

One of the chief opportunities for betterment recommended in the report is that of dispensary service for the benefit of the poor, among whom much sickness occurs, a greater portion of which is of the communicable and preventable variety. These patients, if not treated, serve as reservoirs, or incubators of infection, and purely as a matter of economy, if nothing else, should be found and cured. The most effective way in which this can be done, it is stated, is through a free health department dispensary which becomes a recognized center not only for medical treatment but also for the dissemination of all kinds of sanitary knowledge.

A good housing law is recommended as being especially desirable for Atlanta with its large colored population and congested living conditions, which make the spread of infectious diseases easy. It would produce a great improvement also in the houses of the better classes, eliminating dark rooms and insuring proper sanitary arrangements, etc.

The report says of the negro, who constitutes a larger proportion of the population than in many Northern cities, that he may be regarded as a hygienic liability, but at the same time represents a hygienic opportunity because he represents an opportunity to reduce greatly the community's stock of infectious diseases. At present in Atlanta practically no attention is paid to infectious diseases among the negroes, and no isolation hospitals are open to them.

The recommendations and conclusions of the report embody the correction of the conditions criticized above and as far as posible a reorganization of the health department, centering greater authority and responsibility in a competent health officer, and above all, providing adequate appropriations for carrying out the well-known problems of city hygiene and sanitation.

As of course is to be expected, Atlanta presents special problems, which the survey has revealed, but, as we have stated, in the main the criticisms of almost every condition mentioned will apply to practically every city in the land. The fact that a survey has been demanded by the citizens of Atlanta is the best assurance that progress is bound to be made along these lines.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 13. Chairman, Dr. W. H. Sanders, Montgomery.

Arizona: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

Colorado: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Illinois: The Coliseum Annex, Wabash Ave. and 16th St., Chicago, Jan. 14-16. Acting Sec., Amos Sawyer, Springfield.

Indiana: Room 56 State House, Indianapolis, Jan. 13-15. Sec., Dr. Wm. T. Gott, 56 State House, Indianapolis.

Iowa: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

Kentucky: Armory, Louisville, Dec. 11-13. Sec., Dr. J. N. McCormack, Bowling Green.

Maryland: Homeo., St. Luke's Hospital, Baltimore, Dec. 15-16. Sec., Dr. O. N. Duval, 1817 N. Fulton Ave., Baltimore.

Minnesota: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.

New Hampshire: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.

New Mexico: Santa Fe, Jan. 12. Sec., Dr. W. E. Kaser, East Las Vegas.

North Dakota: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.

Oklahoma: Oklahoma City, Jan. 13. Sec., Dr. John W. Duke, Guthrie, Okla.

Oregon: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

South Dakota: Capitol Bldg., Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.

Vermont: Montpelier, Jan. 13-15. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, Dec. 16-19. Sec., Dr. Herbert Old, Norfolk.

Washington: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

Wisconsin: Madison, Jan. 13. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

Louisiana October Report

Dr. A. B. Brown, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Oct. 27-29, 1913. The number of subjects examined in was 10, the total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 27, of whom 16 passed and 11 failed. Four candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Birmingham Medical College	(1913)	85.2
University of Alabama	(1913)	82.9
Chicago College of Medicine and Surgery	(1913)	83.7
Illinois Medical College	(1910)	79.6
Tulane University, (1897) 77.1; (1910) 84; (1913) 78.7; 82.4; 87.6; 89.7; 90.1; 90.8.		
Jefferson Medical College, Philadelphia	(1913)	82.6
Memphis Hospital Medical College	(1913)	79.8
University of Tennessee	(1913)	77.4
Fort Worth School of Medicine	(1911)	86.4

FAILED

College	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons	(1913)	68.6
Flint Medical College	(1910)	61.1
Meharry Medical College	(1912)	68
Memphis Hospital Medical College, (1901) 60.7; (1911) 65.4; (1912) 65.7; 73; (1913) 51.5.		
University of Tennessee, (1913) 59.9; 71.6; 72.5.		

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Illinois	(1912)	Illinois
University of Louisville	(1912)	Kentucky
Baltimore Medical College	(1912)	Maryland
University of Michigan	(1912)	Michigan

One candidate, a graduate of the Hahnemann Medical College, Chicago, in 1906, was licensed through reciprocity with Illinois by the Homeopathic State Board of Medical Examiners of Louisiana, November 3, 1913.

The following questions were asked:

PATHOLOGY

1. (a) What is an infarct? (b) What is an anemic infarct? (c) What is a hemorrhagic infarct? 2. Describe the process of healing wounds by first intention. 3. Name the different forms of pus-producing cocci, and state which of these are the most virulent. 4. (a) What is suppuration? (b) What is leukocytosis? 5. What changes occur in joints following gonorrheal metastasis? 6. Describe the pathology of acute osteomyelitis. 7. What are the pathological changes found in the small intestine in typhoid fever? 8. Describe the gross pathology of acute lobar pneumonia. 9. Describe the

pathology of pyonephrosis. 10. Describe the pathology of arteriosclerosis.

ANATOMY

1. Name boundaries, anterior and posterior of axilla. 2. Describe the thoracic duct. 3. Give origin and structures supplied by the glossopharyngeal nerve. 4. Describe the Y or iliofemoral ligament. 5. What is connective tissue? Where is it found? 6. Name ligaments of ankle joint. 7. Describe the pleura. 8. Describe the arteries and veins passing to and from the kidney. 9. Give component parts of spermatic cord. 10. Describe the relations of the peritoneum to the bladder.

PHYSIOLOGY

1. What is invertin, and what part does it play in digestion? 2. What is an internal secretion; name the more important organs concerned in the process of internal secretion. 3. What are the principal waste products of metabolism and through what channels are they excreted? 4. What are the average proportions of the principal constituents of normal human milk? 5. What kind of nerve impulses are carried through efferent and afferent nerve fibers? 6. What is the result of injury to, or removal of, the semicircular canals? 7. Name the nerves concerned in the constriction and in the dilatation of the pupil of the eye. 8. State briefly what is understood by diapedesis and phagocytosis. 9. What factors are concerned in the second sound of the heart and where is this sound best heard? 10. Relative to external respiration, state briefly what is understood by (a) tital air, (b) complemental air, (c) reserve air, (d) residual air.

CHEMISTRY

1. What are the principal allotropic forms of carbon? 2. How does carbon dioxide act as a poison? 3. What is an unorganized or soluble ferment? 4. Name the soluble ferments of the body. 5. What are the tests for starch? 6. What caution should be observed in testing urine for sugar? 7. What are ptomaines, and name some of the best known ptomaines? 8. What is the principal salt of silver used in medicine, and what are the properties of this salt? 9. What are fats, and name the principal animal fats. 10. (a) Is elementary arsenic poisonous, (b) how does arsenic prove poisonous, (c) which is the most common poisonous compound of arsenic?

THERAPEUTICS

1. (a) What are mydriatics? (b) Name them. 2. Name the principal drugs used for the reduction of blood-pressure. 3. (a) What are cardiac stimulants. (b) Name some of the best known drugs used for this purpose. 4. Describe the physiologic action of the diuretics. 5. How would you treat a case of acute opium poisoning? 6. What are the antidotes for arsenic? 7. Describe the treatment of valvular disease of the heart with failing compensation. 8. How do substances act by counter-irritation? Name some of the best known counter-irritants. 9. Describe the action of antidiphtheric serum in a case of diphtheria. 10. What are the physiologic actions of the salts of cinchona?

PHYSICAL DIAGNOSIS

1. What are the types of normal respiration, and what conditions would cause alterations of same. 2. What conditions influence the production and variation of pitch? 3. Define dyspnea, and state the types and causes of same. 4. Summarize the points of differentiation between pleuritic friction sounds and bronchitis. 5. Describe the natural heart sounds, and the causes of each. 6. Describe the characteristics and significance of the various kinds of arterial pulse. 7. What are the physical signs of pericarditis with effusion. 8. Differentiate cardiac hypertrophy and cardiac dilatation. 9. Give the physical signs of combined aortic and mitral insufficiency. 10. Describe the physical signs of ascites and those of cystic disease of the ovary.

SURGERY

1. Give treatment of a compound fracture of humerus. 2. Give symptoms and treatment of tubercular hip joint. 3. What operative measures may be indicated in exophthalmic goiter? 4. Differentiate between enlarged inguinal glands, hernia and hydrocele. 5. Give diagnosis and treatment of epithelioma of lower lip. 6. Give symptoms of acute osteomyelitis. 7. Describe the operation of posterior gastro-enterostomy. For what condition is it most frequently performed. 8. Give symptoms, diagnosis and treatment of tubercular kidney. 9. Give signs, symptoms and treatment of depressed fracture of skull. 10. Describe Colles' fracture. How is it generally produced and how should it be treated.

OBSTETRICS

1. (a) What are the causes of prolonged first stage of labor; (b) dangers; (c) management? 2. Discuss in general the principal drugs used to hasten labor. 3. What are the prerequisites, indications and contraindications for the use of forceps. 4. What are the causes of hemorrhage before and after delivery? 5. (a) What conditions necessitate version; (b) forceps delivery; (c) Cesarean section? 6. Describe a cesarean section. 7. Vaginal examination shows the saggital suture occupying the right oblique diameter; the small fontanelle is felt opposite the right sacro-illiac synchondrosis, the large fontanelle being directed toward the left and front. (a) What is the position of the child; (b) how may the case end; (c) treat the case if nature's efforts are unsuccessful. 8. What changes occur in the fetal circulation at birth. 9. Give the etiology and treatment of subinvolution of the uterus. 10. What is the cause and treatment of frequent urination in pregnant women?

GYNECOLOGY

1. Name the different malignant neoplasms of the ovary. 2. (a) What symptoms and signs would lead you to suspect carcinoma of the body of the uterus? (b) Why is carcinoma of the body of the uterus less malignant than carcinoma of the cervix? 3. Name the muscles of the female perineum which may be torn during labor. 4. Describe the pathology of cystocele and of rectocele. 5. Name the causes of dysmenorrhea. 6. Differentiate between incomplete abortion and extra-uterine pregnancy. 7. Name the different varieties of uterine fibroids. 8. What general and local conditions may cause amenorrhea? 9. Describe the operative treatment for prolapse of the uterus. 10. What symptoms may follow retroversion of the uterus?

HYGIENE

1. How does the expired air from persons differ in its composition from ordinary air? 2. Name at least six bacterial diseases in which the respiratory tract is the portal of entrance for the microorganism. 3. What are the advantages of pasteurized milk? 4. What is the specific gravity of normal cows' milk, and to what is it due? 5. What is understood by active and passive artificial immunity? 6. What is the value of temperatures and sunlight as physical disinfectants? 7. What is understood by an intermediary host in the transmission of infection, and give examples of diseases transmitted in this manner. 8. What measures must be instituted in the prevention of bubonic plague? 9. What is a diphtheria carrier, and what precautions should be observed with regard to the carrier and the community? 10. Which is preferable, the combined system of sewerage and drainage, or the separate system, and why?

Nevada November Report

Dr. Simion L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written and practical examination held at Carson City, Nov. 3-5, 1913. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 10, of whom 7 passed and 3 failed. Twelve candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
California Eclectic Medical College	(1913)	90.9
Hahnemann Medical College of the Pacific	(1905)	84.9
New York Homeopathic Med. Coll. and Hospital	(1908)	80
University of Buffalo	(1893)	75
Eclectic Medical College, Cincinnati	(1913)	87.8
Ohio-Miami Medical College	(1911)	81.8
University of Toronto	(1899)	94.6

FAILED

College	Year Grad.	Per Cent.
California Eclectic Medical College	(1903)	57.8
Hospital College of Medicine, Louisville	(1898)	57.4
Kentucky School of Medicine of Louisville	(1906)	63.2

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Georgia	(1899)	Georgia
Bennett College of Eclectic Med. and Surg.	(1886)	S. Dakota
Hahnemann Med. College and Hospital, Chicago	(1895)	S. Dakota
Chicago Medical College	(1879)	Illinois
Rush Medical College ......(1902) S. Dakota,	(1912)	Minnesota
Physico-Medical College of Indiana	(1889)	Indiana
Baltimore Medical College	(1903)	Illinois
College of Physicians and Surgeons, Baltimore	(1912)	Utah
Maryland Medical College	(1911)	S. Dakota
University of Minnesota, Homeopathic Dept.	(1907)	Minnesota
University of Nebraska	(1902)	Nebraska

Book Notices

Gonorrhea in Women. *Its Pathology, Symptomatology, Diagnosis and Treatment; Together with a Review of the Rare Varieties of the Disease Which Occur in Men, Women and Children.* By Charles C. Norris, M.D., Instructor in Gynecology, University of Pennsylvania. With an introduction by John G. Clark, M.D., Professor of Gynecology, University of Pennsylvania. Cloth. Price, $6 net. Pp. 521, with 40 illustrations. Philadelphia: W. B. Saunders Company, 1913.

This is the most important treatise on the subject of gonorrhea thus far prepared in the English language. The work is most elaborate in its wealth of detail and is far more than a mere monograph. While dealing chiefly with the Neisserian infection in women the scope is necessarily broader. Thus in the chapter devoted to prophylaxis, the various methods employed to prevent infection in men is set forth at length.

After an interesting and comprehensive historical account the bacteriology of the gonococcus and the pathologic changes produced in the female genital tract are described. There is an unusually full description of the pus-tube, with several excellent illustrations. Chapters on sociology and prostitution are properly placed side by side and again indicate the breadth of the author's point of view. His statistical reports are most interesting. It is stated that of half a million prostitutes in our great cities, 40,000 die annually, 30 per cent., as a result of gonorrhea Approximately 60 per cent. of all gynecologic operations are performed for gonorrhea or its results. These chapters contain numerous and elaborate statistical tables. As a result of his exhaustive study of the subject of prostitution Norris advocates legal regulation, though recognizing the difficulty of securing efficiency. He is a strong advocate of instruction in sex hygiene for boys and girls of high-school age, believing that regulation is of minor importance as compared with educational methods in the ultimate solution of this difficult problem. Norris takes an advanced position again in his advocacy of an obligatory certificate of health for the male before marriage, and of a ruling making venereal diseases notifiable to the board of health. Indeed, he goes further and would make it a punishable offense to communicate a venereal disease.

In tracing the pathologic changes incident to this infection a topographic sequence has been adopted, beginning with the external genitalia and following the process through the vagina, uterus and appendages into the pelvis. The unusual manifestations and the remote complications are discussed in order as well as the relations of gonorrhea to pregnancy, labor and the puerperium. Gonorrhea in the extremes of life and its extragenital manifestations are clearly discussed. The operative methods of treatment are described comprehensively, emphasis being placed, however, on the importance of conservative medical treatment before surgical intervention is undertaken. In his operative procedures the author is a stanch advocate of conservative work, especially in the young woman. The cure by surgery of chronic gonorrheal processes involving the internal genitalia is essentially a mutilation, and whenever possible the function of menstruation should be preserved, as well as that of reproduction. The medicinal treatment of gonorrhea is exhaustively considered in the final chapter. The author's summary of what he considers the proper therapeutic care of the patient is of chief interest here. Foot-notes provide a vast amount of material for consultation. Far more than a text merely for perusal by the specialist or general practitioner, this volume in its breadth and comprehensive scope, as Dr. Clark well says in the introduction, may be accepted by the legislator and the sociologist as a fundamental treatise.

The Difficulties and Emergencies of Obstetric Practice. By Comyns Berkeley, M.A., M.D., B.C., Obstetric and Gynecologic Surgeon to the Middlesex Hospital, and Victor Bonney, M.S., M.D., B.Sc., Assistant and Gynecologic Surgeon to the Middlesex Hospital. Cloth. Price, $7.50. Pp. 787, with 287 illustrations. Philadelphia: P. Blakiston's Son & Co.

The object of this work, as frankly set forth by its authors, is to afford practical guidance to the practitioner when he is called on to deal with the difficulties and emergencies that attend obstetric practice. The more fundamental topics, such as the physiology and the management of normal pregnancy, labor and the puerperium, are omitted, so that the volume has rather the appearance of an operative obstetrics, differing only in that its field is broader, since it takes in all the pathology of labor, even the non-surgical complications. Thus a number of the early chapters are given over to complications of labor, such as disorders of the intestinal and urinary tracts, the gall-bladder, peritoneum and spleen, the nervous system, respiratory tract, and the heart and blood. In appendicitis the author favors operation on diagnosis. Again, in gall-stones operative interference is advised except during the last two months of pregnancy. On the other hand, in pyelonephritis conservative measures are to be adopted, operation being the rule only when the disease is bilateral. After termination, if the condition remains unimproved for one week, nephrotomy or nephrectomy will probably be indicated. Operation for hyperthyroidism should never be performed without first concluding the pregnancy. In valvular heart lesions, doubt is expressed as to whether the inevitable heart failure appears sooner in the majority of women who have borne children than in those who have remained sterile. Nevertheless, if compensation fails before the sixth month, pregnancy must be terminated, and in labor the second stage is always to be shortened artificially. Induction of abortion or premature labor in pulmonary tuberculosis is to be reserved for special cases, and the mother on no account is to nurse the baby.

In like manner the authors have advanced the more recent ideas in respect to the management of abdominopelvic tumors in connection with child-bearing and of uterine displacements with gestation. When there is evidence of retained fetal products in septic abortion, the uterus is to be cleaned out at the earliest opportunity. The tampon is the most preferred method in the treatment of accidental hemorrhage. Version and the rubber bag are favored in placenta praevia. Cesarean section is reserved for only the most favorable cases, and those in which the implantation over the cervical canal is complete.

Labor complicated by anomalies of the forces, of the genital passages and of the pelvis, and by malpresentation of the child, or by abnormalities of the child and umbilical cord, and labor complicated by rupture of the genital canal comprise a series of interesting chapters as conditions which invariably lead to operative interference. Fever in the puerperium is considered at length and from all its various aspects. Separate chapters are devoted to such topics as the breast, ectopic gestation, and anesthesia and analgesia during the labor. Obstetric operations are gone into in every detail and are profusely illustrated. Aside from a few minor technical differences, such as delivery with forceps in the lateral position, these procedures are identical in performance with those familiar in American practice. A long chapter on diseases and injuries of the new-born and a briefer one devoted to infant feeding conclude the volume.

At no time have the authors striven for brevity. The material fills a large volume and yet conciseness is evident on every page. Throughout, their views are well formulated, either in parallel columns or in one, two, three order. This, indeed, is the feature of the work. As an example, the conditions and indications for forceps extraction may be cited, or the treatment of eclampsia. Thus, while detail is abundant, verbosity is absent, and the volume gives rather the impression of completeness and extreme care in preparation.

An Elementary Study of the Brain. Based on Dissection of the Brain of Sheep. By Eben W. Fiske, A.M., M.D. Cloth. Price, $1.25 net. Pp. 133, with 19 illustrations. New York: Macmillan Company. 1913.

The preparation of an elementary text-book of neurology for premedical and other college students who have neither the biologic training nor the time for the mastery of the larger manuals adapted for advanced medical students is a peculiarly difficult task. The subject is intrinsically complex and difficult, and it is rendered still more so by a confused and cumbersome terminology and often by the failure of writers and teachers to clothe the anatomic detail with functional or any other meaning. Much of that which goes under the name of neurology in our schools is a meaningless jargon of no present or future value to the student. There is a real demand for a brief and very elementary introduction to the nervous system adapted for college students in zoology, physiology and psychology, and several small books of this character have recently been published, none of which, however, is very satisfactory. Beginning students in this subject are usually at first lost in the bewildering complexity of meaningless anatomic detail, and fortunate indeed are those who find their way through these mazes to a point at which they can see the plan of the whole structure. This can be facilitated only by limiting the content of such an introduction to the most important fundamental facts and by presenting no anatomic details whose functional significance is not at once made clear. The choice of these details and the plan of presentation, moreover, must be made by a master of the entire field with a true sense of proportion of part with part and with a unifying motive always kept in mind. The laboratory student is apt to perform his manipulations, faithfully following the directions, but without giving thought to the meaning of the exercise until it is finished—if even then. A beautifully finished dissection made in this spirit has little more pedagogic value to the student than the exercise of carving an effigy on a pipe bowl. The teacher's problem is to induce the student to keep his mind intent on the meaning of the work with which his hands are engaged, and it must be admitted that he derives but little aid in this from most of our manuals of dissection.

Dr. Fiske's little book is in some respects admirably planned. It presents an account of the gross anatomy of the brain of the sheep, with laboratory directions for its study, together with discussions of phylogeny, embryology and functions. These matters are not very well coordinated, however, and the student will probably fail to carry away any but hazy notions of the actual working of the nervous system from the work as a whole. The *physiologic and other* explanatory data appended to the anatomic sections are not always happily phrased, and the work is far from presenting (even when all dissections are made as directed) a clear picture of the brain *as a functioning organ*. The descriptive part, moreover, is marred by many erroneous statements. The chapters are illustrated by photographs of lower vertebrate brains taken from the Ziegler models, by a few simple sketches of embryologic stages *of the* human brain, and by a series of photographs of surface views, dissections and cross-sections of the brain of the sheep. The latter are worthy of the highest praise and, with the accompanying simple key drawings, will prove very useful.

PRACTICAL BACTERIOLOGY, MICROBIOLOGY AND SERUM THERAPY (MEDICAL AND VETERINARY). Text-Book for Laboratory Use. By Dr. A. Besson. Translated and Adapted from Fifth French Edition by H. J. Hutchins, D.S.O., M.A., M.R.C.S., Heath Professor of Comparative Pathology and Bacteriology of University of Durham. Cloth. Price, $10.50 net. Pp. 892, with 416 illustrations. New York: Longmans, Green & Co., 1913.

This work has been designed *purely as a laboratory guide*, the one object *constantly in view in its preparation having* been to make it a book which would *both direct the beginner* step by step and, *at the same time, afford to the more skilled* worker such assistance as would enable him to pursue his researches in a profitable direction. It is one of the most complete and satisfactory laboratory guides to microbiology with which we are acquainted. The value to all types of students is much enhanced by the avoidance of purely theoretical discussions. The subject-matter is arranged in seven parts as follows: general technic, the pathogenic bacteria, the parasitic fungi, the pathogenic spirochetes, the protozoan parasites, the filterable viruses, and the application of bacteriologic methods to the examination of water, sewage and air. Each of these sections is subdivided into many groups, so that the mass of information given is enormous. Each bacterial species is minutely discussed, the morphology, biologic properties, detection and isolation of the organism and the technic and results of animal inoculation being carefully and fully outlined. The illustrations, both plain and colored, are excellent.

MASSAGE. Manual Treatment, Remedial Movements. History, Mode of Application and Effects; Indications and Contra-Indications. By Douglas Graham, M.D. With *Chapter on Massage of the Eye. by Dr. A. Darier.* Fourth Edition. Cloth. Price, $5 net. Pp. 574, with 75 illustrations. Philadelphia: J. B. Lippincott Company, 1913.

This is a comprehensive, scientific work of a man who has devoted his life to the subject, and who has his own ideas and knows how to express them. His knowledge of French, German and Italian has enabled him to review a great deal of the literature on massage. What particularly makes the book readable is the fact that Graham always has an eye open for the humorous, and the fact that his humor sometimes is turned into sharp satire does not make it less easy to read. Particularly good are the sections on the history of massage, *on the mode of* operation and on traumatic joint affections.

HANDBOOK OF PHYSIOLOGY. By W. D. Halliburton, M.D., LL.D., F.R.C.P., Professor of Physiology, King's College, London. Eleventh Edition (Being the Twenty-Fourth Edition of Kirkes' *Physiology*). Cloth. Price, $3 net. Pp. 923, with *nearly* 600 illustrations. Philadelphia: P. Blakiston's Son & Co., 1913.

The present edition of this hand-*book* differs from the preceding one because several *chapters* have been rewritten and the others revised. The *last two* chapters of the previous edition are replaced by a *new one* on reproduction, development, growth and death. Heredity and eugenics are also briefly discussed. The work of revision, together with the introduction of considerable new matter, has been conducted in such a manner that the size of the book instead of being increased is actually less by a page than the previous edition.

Medicolegal

Defective Prosecution on Quarantine Order—Powers Under Statutes to Protect Public Health—Judicial Notice of Scarlatina

(State vs. Rackowski (Conn.), 86 Atl. R. 606)

The Supreme Court of Errors of Connecticut reverses for error a judgment of conviction, and orders a new trial for the defendant, who was charged with having violated an order of the health officer of the borough of Naugatuck quarantining her and her two minor children as persons whom the health officer had reasonable grounds for believing to be infected with scarlatina or scarlet fever.

The court says that the information assumed to charge the crime provided for by Section 2552 of the General Statutes of Connecticut, for a violation of an order of the health officer made under Section 2549, reading "Any town, city, or borough health officer or the board of health of a city or borough, may order any person whom they have reasonable grounds to believe *to be infected* with any malignant, infectious or contagious disease, into confinement in a place to be designated by them, there to remain so long as said health officer or board shall judge necessary." Before a lawful order can be *made under this statute, the health officer must* have a reasonable belief that the person or persons ordered into confinement are infected with a contagious disease.

The proof failed to meet the charge inasmuch as the information charged a violation of an order quarantining the accused because the health officer had reasonable grounds to believe that she was infected with a contagious disease, whereas the record did not show that the accused was either *infected with that disease or that the health officer had* reasonable grounds to believe she was so infected. There was therefore no basis for the charge that, if the jury found that the accused herself broke the quarantine by going abroad, it was their duty to find her guilty.

The state pointed out, with emphasis, the danger to the community if one having been exposed to a contagious disease might not be quarantined by the health authorities. Lest such a want of power may be inferred from this decision, the court points out the source of power of the health officer to prevent the spread of contagious diseases by an order quarantining those who may have been exposed.

This information did not charge the accused with violation of an order of confinement for having been exposed to a contagious disease. The statute on which it is based does not provide for or contemplate such an order. But that statute is only one of a body of laws designed to protect and preserve the public health. Such an object is *a chief end of* government, and the legitimate exercise *of the power of the* state for the accomplishment of such a purpose is a governmental duty which falls within the police power. Its origin rests in necessity. *The prevention of the* spread of disease is required *either* by express statutory provision or by the necessary *implication* arising out of the imposition of such a duty.

The Connecticut statute, Section 2531, as amended in 1905, invested the health officer of the borough of Naugatuck in common with the health officer of every city and borough of the state with "all powers necessary and proper for preserving the public health and preventing *the spread* of diseases therein." Statutes whose object is the protection and preservation of the public health should receive a *liberal* construction. The powers conferred by Section 2549, *to* prevent the spread of *contagious diseases*, are not exclusive, and do not limit the power conferred by Section 2531, as amended, over the spread of contagious diseases *to orders* relating wholly to the person who has the disease or whom the health officer has *reasonable* grounds to believe to be infected with such disease. The power *to make all* reasonable health regulations, including *the quarantine of* those who may have been exposed to contagious *disease*, is within the fair intendment of the *powers conferred* by Section 2531, as amended. The *violation* of such an order or regulation would be within the penalty of Section 2552.

The health officers of the state are not only bound to make all necessary and proper regulations to prevent the spread of disease, but they are bound to exercise the highest diligence in enforcing these regulations. Common knowledge tells us that contagious diseases may be communicated by those who have been exposed to the diseases. And it is the common practice for the health authorities to detain all such persons from going abroad so long as the danger of contagion is imminent from those who have been exposed.

The court affirms the legality of reasonable quarantine regulations by the Naugatuck borough health officers, designed to prevent persons infected with a contagious disease, or suspected by the health officer, on reasonable grounds, of either infection or exposure, from intercourse with other persons in the community. But the prosecution for violation of the regulations must be based on the order made.

As no complaint was made of this order on the ground that no period of confinement was specified, the court assumes that the period intended by the order was the duration of the danger from the disease to be determined by the health officer. Such an order was a reasonable quarantine regulation.

A mother who directly violates a lawful order of a health board, whether made under Section 2549 or not, or who knowingly permits her child for whose custody she has legally been made responsible to violate that order, is equally guilty of the offense whose penalty is prescribed by Section 2552. The jury might under the facts before them have found the existence of such an order.

One instruction to the jury gave rise to the question whether there exists an experience or probability so general as to have resulted in a presumption of universal acceptance, in the absence of proof to the contrary, that when a child is abroad in violation of a quarantine order this is with the mother's knowledge and consent, or whether there is any policy or convenience of the law which has compelled the acceptance of such a presumption. The court thinks that there is no policy of the law to rest this presumption on, and that experience proves the reverse of this assumption. A mother's love for and care of her sick child is the general presumption of all people, of all times, and of every social rank. There is no presumption of law that the mother knew and consented to the violation of the quarantine order, and hence the trial court erred in charging that the state made out a prima facie case against the mother by mere proof of the violation of the order by the children. Whether any inference was to be made of the mother's knowledge and consent to the violation of the quarantine order from the circumstances of this case was an inference of fact within the province of the jury. An inference which may or may not be drawn by the jury is far different from a presumption of law which must be drawn until proof to the contrary is offered.

The court was clearly right in taking judicial notice that scarlatina is an infectious or contagious disease.

City without Right to Pollute River with Sewage

(Attorney-General vs. City of Grand Rapids (Mich.), 141 N. W. R. 890)

The Supreme Court of Michigan says that this was a proceeding to declare and to abate and restrain the continuance of an alleged public nuisance which was claimed to result from acts of the city in conveying through artificial means its sewage into the Grand River, which flowed down the river and was cast on the lands below that city, and particularly on those lands which are adjacent to and within the village of Grandville. In the court's opinion the equities of the case were with the complainants, and the testimony made out a case of public nuisance. If the city in emptying its sewage into Grand River, as shown by the evidence, created a nuisance to the public or riparian proprietors below the city, the continuance or creation of that nuisance might properly be restrained by injunction, and the attorney-general was a proper complainant.

Undoubtedly the city has the right to make a reasonable use of the waters of the river as a riparian owner. But the court's attention has not been called to any statute giving the city the right to use Grand River below its limits as a sewer for the purpose of carrying away its waste and refuse in an unreasonable manner; and, if it were attempted by statute to give such a right, the statute would be unconstitutional, unless it first provided that the owners of property along the river should be compensated for damages to be first determined by constitutional methods for destruction of such property rights. If the city creates, or threatens to create, a public nuisance, particularly outside of its corporate limits, it is subject to the same rules as would be a private individual, particularly when in the creating of such nuisance it acts not in a governmental but in a private capacity.

There can be no prescriptive right, that is from long usage, to pollute a stream by the discharge of sewage in such a manner and to such an extent as to be injurious to the public health. Even assuming that a prescriptive right to foul a stream with sewage can be acquired, such must be restricted to the limits of it when the period of prescription commenced; and if the pollution be substantially increased, whether gradually or suddenly, the court will interfere by injunction to prevent the wrongful excess; and, if it be impossible to separate the illegal excess from the legal user, the wrongdoer must bear the consequences of any restrictions necessary to prevent the excess, even if it unavoidably extends to the total prohibition of the user.

No person is entitled on the ground of ancient custom to the privilege to collect a mass of sewage matter and pour it at one point into a stream in such a quantity that the river cannot dilute it on its passage down to the lower riparian proprietors, as the effect of such an act is to create an evil which must be illegal, being such as no custom can authorize. The general rule is that sewage cannot be cast into the stream to such an extent as to pollute it. Sewage cannot be thrown into the stream in such a way as to render the water foul and unfit for use.

Wherefore the decree of the court below in favor of the defendants is reversed, and one entered for the complainants restraining the city, its boards, officials, servants and agents from continuing to discharge the sewage of the city into the Grand River, until the same shall have first been, by the use of a septic tank or tanks, so deodorized and purified as not to contain the foul, offensive or noxious matter (which it now contains) capable of injuring the complainants or their property, or causing a nuisance thereto; such injunction to become operative one year after the date of the settling of decree. The complainants will also recover of the defendant city their costs of both courts.

Physician's Liability—Presumptions Do Not Relate Backward

(Adams vs. Junger (Iowa), 139 N. W. R. 1096)

The Supreme Court of Iowa reverses for trial errors a judgment for alleged malpractice in the treatment of fracture of the neck of the femur of the plaintiff's left leg, sustained January 11. The defendant was immediately called, and arrived at the plaintiff's house within an hour and a half of the time she received her injuries. He continued to treat the case until May 29. On June 5 the plaintiff's husband called on the defendant and paid his bill, making no complaint. A roentgenoscopy, made June 24, disclosed the fact that the fracture had not been reduced, that there was a non-union of the broken bones, and that one end of the bone had extended up into the flesh for an inch or more, causing excruciating pain; but there was no testimony of any negligence on the part of the defendant in his original treatment, or in the use of the appliances which he did in fact use.

There was error in the instructions given to the jury. If the court had in mind the thought that the defendant did not, in discharging the plaintiff, properly direct her as to the care of the limb, or that he did not then examine her for misplaced bones, he should have instructed the jury that it could not allow for any pain or suffering occurring prior to the time that the defendant was found to be negligent. In other words, if, as the court instructed, the defendant was not negligent in his original treatment, he could not be held for any suffering endured by the plaintiff during the time this treatment continued, and, if held responsible for something occurring after this treatment ceased, he should be held liable only for such pain and suffering, if any, as resulted from his negligence at that time, and not for what might have been endured from the beginning. And, in any event, the plaintiff could not recover, unless she proved the negligence charged in her petition, and her damages must be limited to such as proximately arose from the negligence charged.

Presumptions do not ordinarily relate backward. A condition, once shown, may be presumed to continue; but ordinarily from a condition once found no presumption is indulged that it has existed for any given time in the past. True, such presumptions sometimes arise in virtue of the nature of the condition; but this arises from proof of other things in addition to present conditions, as its condition of permanency of progressiveness.

Liability of Agent of Corporation for Unlawfully Practicing Medicine

(Norwood vs. State (Texas), 158 S. W. R. 270)

The Court of Criminal Appeals of Texas says that the main contention in the court below of the appellant (defendant), who was convicted for unlawfully practicing medicine, was, in effect, that, while numerous patients were treated in the hospital of which he had charge, it belonged to a corporation, and he was the mere manager, employee and agent of the corporation in whatever was done in the way of treating patients, receiving pay therefor, etc. The court at his instance gave this special charge to the jury: "You are instructed that if you believe from the evidence that the treatment given to Vinnie Spangler was given by the Norwood Institute, a corporation, and not by the defendant, then, in that event, your verdict should be for the defendant, and you should say by your verdict not guilty." This special charge was not the law and should not have been given. Even if he was an officer, agent, servant or employee of said corporation and committed the offense charged, even though purporting to act or acting for the corporation, he would be guilty. Mr. Bishop in his Criminal Law, in Section 892, says, "An agent or servant who, knowing the facts, does a criminal thing for his principal or master, is answerable to the criminal law precisely as though he had proceeded self-moved, and for his own personal benefit. And it is the same when with the like knowledge he merely assists therein." Again, in Section 685, he says, "The authorities agree that there are in misdemeanor no accessories either in name or in the order of the prosecution." Mr. Branch in his Texas Criminal Law, Section 681, lays down this rule: "There is no distinction between principals and accomplices in misdemeanors; a party who would be an accomplice if the offense was a felony is a principal if the offense is a misdemeanor. If defendant comes either within the definition of an accomplice or a principal, he is a principal in a misdemeanor." Then there was a fatal variance between the allegations and the proof in this case in that the allegations charged that the defendant did unlawfully treat a disease or disorder, to wit, did treat Vinnie Spangler for consumption, diagnosing her case and prescribing some gas treatment therefor, while the proof did not establish or tend to establish that Vinnie Spangler had consumption or was treated for consumption.

Small-Pox.—Eleven of the thirteen patients now in the small-pox hospital of Chicago, qualifying for waffle-iron faces, came from a "health institute" which denounces vaccination as wicked, superstitious, useless, nasty, impertinent and an "invasion of personal rights." This condition is typical. Small-pox has been well named the "poisoned arrow of the fool-killer." Those who want to escape these arrows had better provide themselves with the only shield that experience has proved effective—vaccination.—Chicago *Journal.*

Society Proceedings

COMING MEETINGS

American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Southern Surgical and Gynecological Assn., Atlanta, Dec. 16-18.
Western Surgical Association, St. Louis, Dec. 19-20.

CHICAGO PEDIATRIC SOCIETY

Regular Meeting, held Nov. 21, 1913

The President, Dr. Frank X. Walls, in the Chair

Report of Two Cases of Pachymeningitis Hemorrhagica

Dr. Grace Meigs: This condition has been well recognized in the adult for a long time, but only recently as not uncommon in children, especially in infants. The onset is characterized by convulsions, vomiting and signs of acute meningitis. In 1881 it was first suggested that the condition could be diagnosed during life. Finkelstein, in 1904, suggested that a puncture of the fontanel could be made in these cases, and a bloody fluid, characteristic of the disease, could be obtained. He also was the first to mention the presence of retinal hemorrhages.

The cause of pachymeningitis hemorrhagica has been variously explained. The older writers, in describing the condition in adults, ascribed it chiefly to tuberculosis and syphilis, but Huebner thinks that congenital syphilis is by far the most frequent cause; also chronic gastro-intestinal diseases. Finkelstein, however, thinks that rickets is the most important predisposing cause. Hahn suggests that it is a manifestation of the hemorrhagic diathesis. Virchow thinks that the primary lesion is an inflammation of the dura mater. All are agreed that it is apparently due to toxins.

The post-mortem findings are characteristic. The inner surface of the dura is covered with a membrane, most abundant on the convexity, but usually present all over the dura. It is rather closely adherent, but can usually be peeled off from the dura, leaving it quite smooth and only somewhat thickened, with a few ecchymoses. The membrane varies in thickness from the most delicate cobweb-like membrane to a very thick connective-tissue layer. There are many layers, and between them the hemorrhage occurs, spreading them apart so as to form a bag, into which there is often an effusion of fluid, and then probably later hemorrhages; at least all stages are found with simply a yellow fluid or a fluid containing blood, or simply with blood-clots. The brain itself shows no changes, except evidence of pressure.

It is not known just what the effects of such a condition would be on the brain in after-life. It is possible that some of the paralyses of childhood may be due to this condition. The spinal fluid in all the cases reported contained some blood—very often only found microscopically; but sometimes the fluid was markedly hemorrhagic.

In some cases no clinical symptoms of any kind are shown during life, but the condition is found post mortem. In those which do show symptoms there are two classes: First, the symptoms are those of hydrocephalus with recurring attacks simulating an acute meningitis, with coma, convulsions, vomiting, strabismus, opisthotonos and all the other symptoms; secondly, the symptoms are merely those of hydrocephalus, together with perhaps increased reflexes or a little rigidity. In both classes there is evidence of a hydrocephalus—that is, the fontanel is large and bulging, the sutures are gaping, and there is often a hydrocephalic stare. This enlargement of the head is sometimes very sudden. The most characteristic findings are those of a choked disk and retinal hemorrhages, the latter being fairly diagnostic. Important for diagnosis, however, is the finding of fluid on puncture of the fontanel, and this procedure is quite without danger in all cases. The only thing to be avoided is puncture of the central sinus, which can easily be done by making the puncture at the lateral angle of the fontanel. A needle with a short point is used. In the positive cases, immediately on going through the skin and somewhat resistant dura there is a gush of fluid, under mild pressure. This fluid is quite characteristic, being composed of a bright yellow or orange serous layer, and a layer of dark, chocolate-colored erythrocytes. These show evidence of having been long in the fluid. The erythrocytes settle at the bottom when the fluid stands, and there is no coagulation.

In treatment, probably the most commonly used measure is lumbar puncture, and this is proved to have good effect because several patients who have been observed through the course of the disease and have died from some other diseases afterward have shown the trouble in the stage of resolution and cure. Finkelstein does not think that puncturing the fontanel does any permanent good. He advises the use of gelatin, and injects 20 c.c. of a 10 per cent. solution. Huebner uses the antisyphilitic treatment with the idea that most of the cases are syphilitic, and he has seen good effects.

My first case while not a definitely proved case, was very suggestive of this condition. The baby was 3 months old, and was admitted with the diagnosis of hydrocephalus. There was no syphilitic or tuberculous history. The condition of the head had been present since birth, but had lately been getting worse. Examination showed a well-developed child; the head was enlarged and the sutures separated; the eyes were turned to the right and fixed. A few days later the right arm was inverted and flexed, and not moved; later the left arm showed the same condition. For the first few days the condition was quite good, but about three days after entrance an acute attack began, with convulsions, lasting one and a half minutes, with twitching of the right side of the face. Temperature was 101 F. Stools were good at this time. Lumbar puncture showed fluid under a high pressure; there were 7,000 leukocytes to the cubic centimeter. Noguchi was positive. There was no evidence of syphilis. Reaction was positive for a condition of inflammation. The cultures and smears were unsatisfactory. An organism was seen which the pathologist considered a contamination. It looked rather like an influenza bacillus. A tentative diagnosis of pachymeningitis was made, and puncture of the fontanel on the left side done because the symptoms were so well localized on the right side. The fluid was obtained under quite mild pressure, was opalescent and with quite a mixture of blood, but was not yellow On standing, it coagulated and there was a marked deposit of blood. It was sterile. Spinal puncture made at the same time gave an opalescent fluid, with a slight precipitate of blood. It was seen only after having stood for twenty-four hours. The blood was evidently thoroughly mixed with the fluid. The leukocyte count was 100 per cent. No cell count was made, on account of the mixture with blood. After this the child's condition improved, but later it developed nasal diphtheria and died.

The second case was undoubtedly one that could not be diagnosed during life. There were no symptoms except enlargement of the head. The child was 4 months old, and was brought into the hospital, not on account of the condition of the head, but merely because of the failure to gain, vomiting and constipation. It had a history of gastro-intestinal disturbance. The child was small, emaciated and old-looking. The head was very large and the face small; the anterior fontanel was 4 fingers in diameter. The coronal suture was very wide; the other sutures were plainly palpable. The circumference of the head was 41.25 cm. The neck was not rigid. General examination was entirely negative, except for the emaciation and for the finding of an enlarged spleen and enlarged lymph-nodes. The urine was negative. The Wassermann reaction, both in blood and in spinal fluid, was negative. Lumbar puncture was performed and 20 c.c. of fluid obtained—quite clear and under considerable pressure. The remarkable thing in the course of this case was the decrease in the size of the head (from 41.25 cm. on entrance to 39 cm. at death), which began very soon after the lumbar puncture. While in the hospital there was gradual loss in weight, very bad stools, and finally, twenty-four days later, during very hot weather, the child died quite suddenly. The diagnosis was decomposition and internal hydrocephalus.

Post-mortem was made thirty-six hours after death, and an examination only of the head made, and the condition of pachymeningitis hemorrhagica shown. When the skull cap was taken off bloody fluid escaped, and we found that the inner surface of the dura was entirely covered with a membrane which was in some places quite delicate and thin, and in others thick. It could be peeled off the dura, but was rather firmly adherent in some places. The base of the brain was also covered with the same membrane. There were a great many different layers to be distinguished, and in one place, over the left anterior portion, underneath the puncture, there was about an ounce of bloody fluid. The brain itself was soft and the surface quite negative. There was a moderate degree of internal hydrocephalus present. Microscopically, the dura was thickened and this membrane showed all the different stages of granulation tissue and connective tissue. In some places numerous large blood-vessels were seen, and in other places ecchymoses.

The Feeding of Five Hundred Infant-Welfare Babies

Dr. R. A. Krost: The work done at the conference now is exceedingly gratifying, the former distrust shown by mothers has disappeared, and they now follow our instructions quite faithfully in most cases. The gospel of regularity of feedings, the use of certified milk and the longer interval of feeding has spread, as evidenced by the number of new cases. Individual milk prescriptions calling for certified milk are given. They are prepared by the nurse at the baby's home until the mother can prepare them correctly. The feedings are made as simple as possible, using usually an ounce and a half of certified milk to the pound weight of the child. The milk is diluted with barley-water in varying amounts, according to the child's age, and to the diluent about 5 per cent. cane-sugar is added, although almost never is more than ¾ ounce used. I think that 2 ounces is nearer the amount necessary to bring about a 4-ounce gain or more per week with the small amount of sugar used. Cane sugar is used because it is cheaper. In cases of diarrhea the babies were put on saccharin-sweetened barley-water for from twenty-four to thirty-six hours; then diluted boiled skimmed milk was used, then diluted whole milk, and, lastly, sugar was added. Early in the work I fed the babies on the four-hour interval plan, and later changed it to three because of the inability to feed the ordinary healthy baby enough food to satisfy its caloric needs by the four-hour feeding without using too concentrated a food or too much sugar. Between feedings a few ounces of boiled water were given, if the infant cried.

A mistake too often made in the cases of malnutrition and marasmus is a frequent change in food. A baby becomes adapted to its food; therefore, it is unwise to change it. The weight may remain stationary for a time, or there may even be a slight loss, but eventually there is a gain. In addition to the milk, once a day we gave the babies aged 6 months or over, and sometimes even younger babies, broths containing crumbled toast or farina. Probably the addition to the cow's milk diet brought about its better digestion and assimilation.

I have used boiled milk for six months and found no bad effects from its use. Constipation is perhaps a little more frequent and persistent than on raw milk, but not much. There is little vomiting, less than on boiled milk, and less colic. The gains are about the same from week to week, but greater on boiled milk if followed for months.

There were twenty-eight deaths from all causes in 5,475 cases, a percentage of 5.8. In eighteen cases diarrhea or nutritional disturbance was the cause. These diarrhea deaths occurred during July, August and September.

DISCUSSION

Dr. Albert H. Beifeld: The most common causes of infant mortality are poverty, ignorance and neglect. Simple mixtures should always be used. One of the most important points is the training of the physician. He should learn that each component of breast-milk has a definite physiologic action in digestion and nutrition, and he should be able to manipulate each one of the components so that he will obtain a result without having to rely on the complicated mixtures, such as *Eiweissmilch*, buttermilk, malt soups, etc. There are certain faults which we are tending to fall into in this matter. One is that we do not give enough fat in the food, and another that we are inclined to a rather slavish adherence to the malt-dextrose preparation. Just as the mother should be trained to develop a certain sense of independence in caring for the baby and understanding how to control its feedings, so the baby's intestine should be trained to endure the more actively fermenting sugars, such as cane-sugar or milk-sugar, and if we persist slavishly in the use of malt-dextrose preparations we are pampering the baby's intestine. These things should be used as therapeutic measures, as intended by the inventor. I endorse the early addition of foods in the feeding of these bottle-fed babies. It has a striking effect, when we give a little portion of soup each day to the baby which has been fed solely on milk. I have seen several babies recently that have been brought from hospitals where they have been fed according to rule and regulation and the highest dictum of our scientific calling, and they were in a miserable condition because they had had nothing to eat.

One other point: We can get along very nicely without the use of *Eiweissmilch* by the administration of simple protein, the dried casein preparations. I recall two cases, with astonishingly striking results, in which, after three, four and five weeks of these slow losses in weight, the addition of a certain casein preparation brought about a gain in weight in two or three days. I think that we are inclined to be afraid of the amount of sugar used. It is neither a foreign body nor a poison. I think that just as we should use a sugar which will train the baby's intestine, we should use as liberal a supply as the condition demands. The outlook is very good in the home modification of milk. At first the mothers are a little bit slow, but when they see the results they become enthusiastic.

Dr. H. F. Helmholz: Dr. Krost thinks that very few cases of diarrhea are due to overfeeding. I should like to call attention to the large series of cases published by a pediatrician in Breslau, in which babies, given as low as 50 and 60 calories per kilogram of weight, gained very rapidly. On questioning the mothers closely it was found that they were giving the babies additional food. Even though we have these mothers very much under our control, still a great deal of food is given, frequently in excess of that which has been ordered.

Dr. Frank X. Walls: These results are particularly interesting, when we consider that only 3.8 per cent. of these babies die. It is in striking contrast to the figures in our text-books as to the death-rate among artificially fed babies. When we consider this low mortality at the conference, it would seem as if the death-rate mentioned comes in great part from the other large majority which are under the treatment of physicians who probably have not the training that the conference physicians have.

The question of weaning babies is an important one. I have found in private practice that great harm often comes from attempting to put a baby who has received only mother's milk for seven, eight or nine months, on other food. It will often refuse it for a week and become desperately ill.

Dr. Joseph Brennemann: We are perhaps apt to overlook the striking results obtained with such simple measures. That point should be emphasized. When we think of what the mortality ordinarily is, one is impressed with the fact that these results are striking. Practical infant-feeding cannot be learned in a hospital—it is an ordinary proposition. The vast majority of babies are fed in the home, and conditions in hospitals are entirely different. I am not saying anything against the work done in hospitals, but such a paper as this, giving such results, would certainly lead one to think that there is a good deal in the idea that babies ought to be fed at home as much as possible.

The Use of Dextrose Solutions in Acute Intoxication in Infants

Dr. H. F. Helmholz: In such cases, because of a severe diarrhea, food must be administered by the subcutaneous or intravenous route. It has been customary to give simply a sodium chlorid solution, isotonic with the blood, or Ringer's solution. Recently Kausch called attention to the advantage of giving sugar solution instead of a saline solution. He used a 5 to 7 per cent. solution of dextrose, giving a liter either subcutaneously or intravenously. The sugar is not only well tolerated, but the worse the condition, the greater the sugar tolerance. In cases of cyclic vomiting, which are usually marked by an intense acidosis, saline-dextrose solutions by clysma by the drop method have given good results. It seems probable, therefore, that dextrose added to Ringer's solution should act beneficially in cases of acute gastrointestinal intoxication marked by acidosis, extreme prostration, vomiting, diarrhea and collapse.

Our routine method of treatment is to withhold all food for from twelve to twenty-four hours, giving merely water or tea by mouth, and stimulating the failing circulation by the use of caffein, camphorated oil, brandy and saline solution subcutaneously. The demand for food is great. All of the infant's resources are being exhausted by the disease. The only route for placing food in the body is the subcutaneous or intravenous. In such cases dextrose is the ideal agent to use. It can be given subcutaneously, say 50 c.c. of a 50 per cent. solution, without harm. Almost 60 gm. have been given, with only a trace appearing in the urine. The most important thing to ascertain is whether the dextrose solution is indicated, whether it has any effect on the rapid loss of weight, and whether its presence in the tissues leads to edema. Finally, what are the effects on the clinical picture?

The solution is prepared as follows: To 1,000 c.c. of freshly distilled water add dextrose, 60 gm.; sodium chlorid, 7.5; sodium bicarbonate, 0.2; calcium chlorid, 0.2, and potassium chlorid, 0.2. Filter and sterilize in flasks of about 100 c.c. capacity. The solution is given hypodermically, either by gravity or by means of a large syringe, in doses of from 50 to 200 c.c. It is injected under the skin of the abdomen or under the pectoral muscles. The smaller doses at shorter intervals are preferable.

We have given the solution in about twenty cases, most of the patients being *in extremis*. In not a single instance was sugar found in the urine. Unfortunately, the stools were not examined for sugar, although it is probable that only very small amounts of sugar left the body through that tract. It would appear, therefore, that the infant in a state of intoxication can tolerate from 4 to 6 gm. of sugar two or three times a day and completely utilize it. Whether or not concentrated solutions can be given with greater benefit is unknown. A study of the weight-charts shows that the water is retained better with the sugar than without it, so that the sugar solution is preferable to the salt solution. In several instances in which the toxemia was intense the loss of weight was comparatively slight, and at no time during the injection was there any palpable edema to explain the maintenance of weight. In some instances the weight was greater at the time of death than on admission. In only exceptional cases were the losses in weight such as one is accustomed to see in these cases. In some cases of intoxication there is apparently no effect from the use of sugar solution. In the majority of cases, however, there was quite a definite improvement (1) in the tendency to come out of the coma; (2) in the improvement of the turgor, and (3) in the circulation. In one or two instances it seemed to be the only thing that kept the infant alive.

DISCUSSION

Dr. J. H. Hess: Did you notice the effect of the administration of dextrose on the acetone in the urine? How long did you keep these babies on the dextrose, on the average?

Dr. H. F. Helmholz: Usually we kept them on water for from about twelve to twenty-four hours, and then started them either on very minute amounts of *Eiweissmilch* or breast-milk. The other routine was about as we have been accustomed to doing. We kept up the use of dextrose solutions for longer periods after we started other foods, but otherwise the feeding was carried on just about as usual. We could not obtain any urine until after giving the solution—and in one case it was twenty-four hours after.

Dr. Albert H. Beifeld: Did you find albumin in almost every case? It has seemed to me that an irritated kidney sometimes holds back the salt and sugar, just as we hear of a diabetes being controlled by a nephritis. If you had a nephritis in every case it might explain the absence of sugar in the urine.

Dr. H. F. Helmholz: After we got further along, we obtained specimens of urine in which there was no albumin, but, as Dr. Beifeld undoubtedly knows, it is usually most severe. We found casts and albumin, but they did not seem to have any related function, nor did the retention of sugar seem to have any relation to the irritation of the kidney from the other cause.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Ophthalmology, New York

November, XLII, No. 6, pp. 577-691

1 New Instruments for Measuring Visual-Field Defects. C. B. Walker, Boston.
2 Some Forms of Retinal Tuberculosis. A. Knapp, New York.
3 Discission of Crystalline Lens. E. Jackson, Denver.
4 Clinical and Anatomic Report of Case of Congenital Distichiasis. H. L. Begle, Detroit, Mich.
5 Pathogenesis of Scleral Staphyloma. A. F. Mattice, Seattle, Wash.
6 Weight of Infants' Lenses and Their Solids. C. A. Clapp, Baltimore.

Arkansas Medical Society Journal, Little Rock

November, X, No. 6, pp. 145-166

7 Skin Grafting. St. C. Cooper, Fort Smith.
8 Phenol-Petrolatum. S. S. Warren, San Angelo, Texas.

Boston Medical and Surgical Journal

November 27, CLXIX, No. 22, pp. 777-816

9 *Clinical Value of Wassermann Reaction. A. Post, Boston.
10 *Comparative Psychology in Relation to Medicine. R. M. Yerkes, Cambridge, Mass.
11 *Problems of Adolescent as Seen in Psychopathic Hospital Outpatient Department, Boston. W. P. Lucas, San Francisco.
12 *Transfusion by Means of Glass Cylinders. A. R. Kimpton, Boston.
13 *Use of Bacterial Vaccines in Acute Septic Conditions of Oral Cavity Met with by Dentist. L. S. Medalia, Boston.
14 *Cancer Control. J. C. Bloodgood, Baltimore.
15 *Effect of Nitrogenous Waste Products in Blood in Chronic Interstitial Nephritis. M. Seymour, Boston.
16 Terminology of Medicine in Relation to Its Original Sources. S. Deland, Boston.

9. **Value of Wassermann Reaction.**—Post suggests that the Wassermann reaction should be regarded as a symptom like other symptoms, and in relation to other symptoms, it will prove a wonderful help. To insist on calling it a test, confuses rather than aids.

10. **Comparative Psychology in Relation to Medicine.**—Yerkes says there are no aspects of organic reaction which are not worthy of accurate measurements in a psychologic investigation. The reflexive and the instinctive often prove to be quite as important as the impulse or voluntary. Comparative psychology deals with facts and principles which are of extreme importance to the physician; it deals with these facts in a systematic, quantitative, law-evoking manner which renders it immediately serviceable to medicine.

The situation in Yerkes' opinion is this: A science of conscious behavior, introspective and quantitatively observational, comparative and rigorous in its demands for verifiability, is developing. Will those who are interested in medical education make use of it or will they continue to permit students to grapple with the problems of human nature without systematic training in the methods of studying conscious behavior, and without a good working knowledge of the facts and principles of human behavior? It is a case of "heads I win, tails you lose," for comparative psychology has much to give and medicine much to gain, and whether or not students of medicine avail themselves of its assistance, it will progress steadily, little by little supplying the principles of organic nature which should enter into the foundations of our social sciences and guide in the varied applications of natural science.

11. **Problems of the Adolescent.**—During the last eight months Lucas examined 123 patients between the ages of 10 and 20 years; 71 per cent., or 88, of these showed some evidence that adolescence had some relation to the condition for which they were brought in. The reasons for bringing these cases in was mainly mental examination. Physical examination brought out the fact that over 39 per cent. of these individuals were normal; under par, 30.89 per cent.; nervous, 24.39 per cent.; those having speech defects, 12.19 per cent.; eye, 9.75 per cent.; ear, 4 per cent.; epilepsy, 5 per cent., and enuresis, 4.87 per cent.; also those having had previous convulsions, 6.5. Naturally, the greatest disturbance was in their volitional powers; a very large percentage being defective or retarded (57.7 per cent.).

12. See The Journal, Nov. 1, p. 1628.

13. **Bacterial Vaccines in Acute Septic Conditions of Mouth.**—Medalia attempts to show by a citation of cases that vaccine treatment is of value in acute septic dento-alveolar abscesses—even the worst types of mandibular impacted third molar abscesses having apparently yielded well to this treatment. Such cases with septic apical abscesses, especially the deep-seated ones or the so-called blind abscesses, acute and subacute, have been greatly benefited by the vaccine method of treatment. Medalia believes that there is a big field for vaccine treatment in acute and subacute dento-alveolar abscess cases and its wide-spread use will save considerable suffering and loss of teeth to the patient, and annoyance to the dentist.

14. Abstracted in The Journal, December 6, p. 2100.

15. **Nitrogenous Waste Products in Blood in Chronic Interstitial Nephritis.**—The effect of high and of low proteid diet on patients suffering from chronic interstitial nephritis, with increased arterial tension was studied by Seymour. Fourteen patients were selected, each case having an arterial hypertension, persistent low gravity urine, with small amounts of albumen, and rare hyaline casts. For five days the patients were given the regular hospital diet, which contained about 60 grams of proteid. At the end of this period the proteid content of the diet was increased and this diet maintained for seven days. By the sixth day they were given about 180 grams of proteid daily. During the next period of eight days, the proteid was reduced, so that they were given very small amounts, the daily average for this period being about 12 grams.

The nitrogen content of the blood was measured at the end of the normal hospital diet period, and at the end of the high and of the low proteid diet periods. Urinary nitrogen determinations were made daily, except on the days when the phenolsulphonephthalein tests were made. These latter were made five times during the course of the experiment. Out of the fourteen cases, eight showed an increase in the nitrogen content of the blood at the end of the high proteid period. Of these eight cases showing a nitrogen increase, six had edema of the face with puffiness of the eye-lids, and complained of nausea and headache. All of these patients vomited, and in each case refused food at the end of the sixth day. Two of the patients who showed the greatest increase in the blood nitrogen, had more marked symptoms than those showing a more moderate one. Two cases showing an increase in the nitrogen, had no symptoms.

Of the six patients showing no increase in the nitrogen of the blood, one had only edema of the face, two had nausea and vomiting with slight edema of the face, two were drowsy, dull, and complained of headache. One patient showing no nitrogen increase, had no symptoms. Two showed a simple irregularity, three no change, and one patient showed a lowering in the blood-pressure. There seemed to be no relation between the arterial tension and the low proteid diet during the eight-day period the diet continued. In some cases there was an irregularity, in some a rise, and in others a fall in the pressure; even though the nitrogen content of the blood was greatly diminished in every instance.

Bulletin of Johns Hopkins Hospital, Baltimore

November, XXIV, No. 273, pp. 327-362

17 *Experimental and Clinical Study of Value of Phenoltetrachlorphthalein as Test for Hepatic Function. L. G. Rowntree, S. H. Hurwitz and A. L. Bloomfield, Baltimore.
18 *Tests for Hepatic Function and Disease under Experimental Conditions. G. H. Whipple, T. C. Peightal and A. H. Clark, Baltimore.
19 *Test for Hepatic Injury: Blood Lipase. G. H. Whipple, Baltimore.

17. **Value of Phenoltetrachlorphthalein as Test for Hepatic Function.**—However, the constant findings in health, the decreased output in liver disease, the analogy between the effect of anemia and myocardial insufficiency on kidney and liver function as indicated by the sulphonephthalein and the tetrachlorphthalein tests, the results of the test in experimental liver lesions, and the established value of sulphonephthalein, based on the same principle as the test in kidney diseases, the authors believe, all indicate that the excretion of tetrachlorphthalein will be useful in the estimation of the functional capacity of the liver.

18. **Test for Hepatic Function.**—This test, the authors believe, promises much in the study of derangements of the hepatic parenchyma, physiologic and anatomic. Its great value is that it may give some quantitative values concerning liver injury, and for this reason, with accumulated experience, may be of value to the clinician.

19. **Test for Hepatic Injury.**—A study of the lipase of the blood, Whipple says, will show a definite rise above normal in practically all cases of eclampsia, liver injury with necrosis due to poisons, intoxications or infections, acute yellow atrophy, cholangitis and abscess of liver with considerable destruction of liver tissue. Cirrhosis of the liver may show a subnormal lipase; it may react to liver injury by a rise in blood lipase, but this point will require more study.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

November, VI, No. 5, pp. 71-90

20 Cooperative Health Work. C. H. Jones, Baltimore.
21 Non-Pasteurized Milk of Baltimore. J. H. Sewell, Baltimore.

Canadian Medical Association Journal, Toronto

November, III, No. 11, pp. 931-1026

22 Thomas Sydenham, the English Hippocrates (1624-1689). W. J. Fischer, Waterloo, Ontario.
23 Some Psychiatric Problems from General Practitioner's Standpoint. C. S. McVicar, Toronto.
24 *Relationship between Tumors Proper (Blastomas) and Hyperblastosis. J. G. Adami, Montreal.
25 Huntington's Chorea. G. A. Shannon, Sparta, Ontario.
26 Diseases of Thyroid Viewed from Standpoint of Surgeon. A. J. Ochsner, Chicago.

24. **Tumors Proper and Hyperblastosis.**—Whatever be the essential cause of the autonomous blastomas, Adami states, we have in these hyperblastoses a group of diffuse overgrowths which by analogy must be regarded as due to disturbances of metabolic equilibrium; which, further, in their simple nonmalignant stages at least, may possibly be combated eventually (certainly not to-day) along the lines of organotherapy. Every transition is observable in this series between the development of overgrowths of fully differentiated tissue, nonmalignant grades of anaplasia, and diffuse malignant infiltrative growths. This suggests strongly that the causation of malignancy is not to be sought for in the entry and action of external agencies, but in stimulation of the growth properties of specific tissues by changes in what Adami terms tissue equilibrium. The more we study, the more we become impressed by the fact that the number of conditions of hyperblastosis, whether simple or malignant, is relatively considerable, so considerable as to deserve separate consideration.

Colorado Medicine, Denver

November, X, No. 11, pp. 323-358

27 Bile-Tract Infections and Their Concomitant Correlated Diseases. L. L. McArthur, Chicago.
28 Roentgenoscopy in Gastro-Intestinal Disease. S. B. Childs, Denver.
29 Salvarsan in Treatment of Syphilis. W. C. Mitchell, Denver.

Indiana State Medical Association Journal, Fort Wayne

November, VI, No. 11, pp. 485-580

30 Roentgenoscopy of Gastric Cancer and Ulcer. R. D. Carman, Rochester, Minn.

Journal of Cutaneous Diseases, New York

November, XXXI, No. 11, pp. 799-974

31 Research Studies in Psoriasis. J. F. Shamberg, J. A. Kolmer, A. I. Ringer and G. W. Raiziss, Philadelphia.
32 Angioma Serpiginosum (Infective Angioma of Hutchinson), with Report of Very Extensive Case. F. Wise, New York.

Journal of Infectious Diseases, Chicago

November, XIII, No. 3, pp. 351-523

33 Value of "Abortin" as Diagnostic Agent for Infectious Abortion in Cattle. K. F. Meyer and J. B. Hardenbergh, Philadelphia.
34 *Production in Monkeys of Antibodies for Human Corpuscles. L. Hektoen, Chicago.
35 *Some Experimental Work on Use of Methylene-Blue and Allied Dyes in Treatment of Tuberculosis. L. M. DeWitt, Chicago.
36 *Effect of Meat and of Meat Extract Media on Fermentative Activity of Streptococci. J. Broadhurst, Ithaca, N. Y.
37 *Influence of Strychnin, Caffein, Chloral, Antipyrin, Cholesterol and Lactic Acid on Phagocytosis. A. Arkin, Chicago.
38 Relative Constancy of Ammonia Production by Certain Bacteria. A. I. Kendall, A. A. Day and A. W. Walker, Chicago.
39 *Case in Which Fusiform Bacillus Was Isolated from Blood-Stream. W. P. Larson and M. Barron, Minneapolis.
40 Fusiform Bacilli: Cultural Characteristics. C. Krumwiede and J. S. Pratt, New York.
41 *Differentiation of Fecal Streptococci by Their Fermentative Reactions in Carbohydrate Media. C. A. Fuller and V. A. Armstrong, Madison, Wis.
42 Spirochaeta Suis: Its Significance as Pathogenic Organism. W. E. King and G. L. Hoffmann, Detroit.
43 *Antigenic Properties of Constituents of Pneumonic Exudate. C. C. Hartman, Pittsburgh.
44 Lesions Produced by Bacillus Proteus. W. P. Larson and E. T. Bell, Minneapolis.

34. **Production in Monkeys of Antibodies for Human Corpuscles.**—In the course of certain experiments on measles and other diseases in the monkey the opportunity was used by Hektoen to follow the development in the monkey of antibodies to human blood-corpuscles. His observations were made on five monkeys (*Macacus rhesus*) injected with human blood. The forms of antibody action detected were agglutination and, in one case, opsonification. The agglutinative mixtures were in quantity 0.6 c.c.; of this, 0.2 c.c. was a 5 per cent. suspension of washed human corpuscles, the rest, monkey serum and salt solution. The opsonic mixtures were made in the same way with the addition of washed monkey leukocytes obtained from exudates produced by the injection of suspensions of aleuronat into the pleural cavity, the total quantity here also being 0.6 c.c. The smears were made after an incubation of 37 C. for one hour.

There was no phagocytosis in similar mixtures in which human leukocytes were substituted for leukocytes from the monkey. The heated serum of these monkeys in quantities of 0.2 c.c., complemented either with fresh monkey serum or with guinea-pig serum (0.0125 c.c.), did not cause any lysis of human corpuscles (0.2 c.c. of a 5 per cent. suspension). No tests for precipitin were made.

The results of these observations as interpreted by Hektoen indicate that in the monkey, injections of human blood stimulate the formation of agglutinin and opsonin for human corpuscles, these antibodies describing the same sort of a curve, though of small range, as other antibodies after the injection of a single dose of antigen. If we may judge from just one or two instances, the injection of monkeys with comparatively small quantities of human blood gives a larger response than injections of large quantities. Hektoen suggests that the fact that monkeys respond in this way to human blood might be taken advantage of in differentiating between human and monkey blood, but self-evidently this would be possible only under very special conditions, so that the method would seem to have an extremely limited practical significance.

35. **Methylene Blue in Tuberculosis.**—It was found by DeWitt that methylene blue will penetrate the tubercle, stain the living tubercle bacillus, and in some cases kill the bacillus *in vitro* and in others lessen its virulence. When added to the culture media, a relatively small percentage of methylene blue will inhibit the growth of the human tubercle bacillus. DeWitt says that methylene blue iodid is no less irritant than the chlorid and has less bactericidal power and no

greater therapeutic value. The new methylene blues used are various modifications of the methylene blue molecule and have in the main no advantage over methylene blue. New methylene blue GG, however, showed some effect in the one case in which it was used therapeutically and it, with other oxygen derivatives of methylene blue, will be given further tests.

Selenium blue and tellurium blue are new blue dyes in which the sulphur of the methylene blue molecule is replaced by selenium and by tellurium. They are weaker and less stable dyes than methylene blue and more toxic and less bactericidal than that dye. They penetrate the tubercle and are reduced in it and can be reoxidized; they stain the living tubercle bacillus, but more faintly than does methylene blue. In fact, they behave in all respects as weaker editions of methylene blue and have no advantage over it. Neither methylene blue nor any of the allied dyes tested by DeWitt had much therapeutic influence over experimental tuberculosis of the guinea-pig. While methylene blue seems for many reasons a favorable starting-point for tuberculosis chemotherapy, the author says that other modifications of it and probably many others must be tried before we can claim to have found a specific for this disease.

36. **Effect of Meat Media on Streptococci.**—Inasmuch as the fermentative activities of streptococci vary greatly with the use of meat or of meat extract in making the special media, Broadhurst suggests that all workers should state definitely whether meat or meat extract media were used throughout such investigations. Qualitative results, estimated with litmus as an indicator, are not comparable with quantitative ones, with phenolphthalein as an indicator, if meat extract is used in making the special media.

37. **Chemical Substances and Phagocytosis.**—From the results of experiments recorded in the literature and the results Arkin has obtained it appears that the effect of chemical substances on phagocytosis varies with their chemical constitution and their pharmacologic action. Alcohol, chloroform, ether, chloral, morphin and potassium cyanid depress phagocytosis *in vitro*. The substances all have an inhibitory effect on oxidation, to which their action on phagocytosis is in all probability due.

That oxidative processes play a rôle in phagocytosis is definitely shown by the fact that sodium iodoxybenzoate, which is an organic peroxid and owes its pharmacologic action as well as germicidal action to the presence of physiologically active oxygen attached to the iodin atom in its molecule, has a marked stimulating effect on the phagocytosis of streptococci and staphylococci *in vitro*. The action appears to be on the opsonin of the serum, which is rendered more active. Likewise strychnin and certain colloidal metals which have a stimulating effect on oxidative processes stimulate phagocytosis to a marked degree. The beneficial effects of improved oxygenation of the blood in infectious diseases may be due in part to the stimulating action on phagocytosis. Furthermore, substances which have a depressing effect on oxidations, as potassium cyanid, chloroform, ether, morphin, germicides, etc., have a distinct detrimental effect on phagocytosis as well as other immune reactions.

Caffein and the antipyretics which are more inert drugs have little, if any, action on phagocytosis. They have no known effect on oxidations in the body. The salts are mostly injurious to phagocytosis, to an extent depending on their toxicity, their ability to effect an exchange of ions with the salts in the cells, and their ability to combine with the opsonins. Those substances which depress phagocytosis *in vitro* have been found, when studied *in vivo*, to have a detrimental effect on the immunity reactions; e. g., the anesthetics, chloral, morphin, some salts and the antiseptics. The substances which have been found to stimulate phagocytosis at all are calcium, magnesium and mercuric chlorids; quinin; colloidal metals; peptone in dilute solution; nucleic acid; a few other leukostimulants such as staphylolysin in weak solution, potassium iodid, and perhaps alcohol; strychnin sulphate and nitrate; sodium iodoxybenzoate; salvarsan and other arsenic compounds; and possibly certain colloidal suspensions of cholesterol. It is interesting that all of these which have been studied *in vivo* have also had a favorable action, namely, salvarsan, calcium chlorid, quinin, colloidal metals (platinum, silver, gold, copper), mercuric chlorid in weak solutions, sodium iodoxybenzoate and cholesterol in colloidal suspension. Hence the action of a chemical substance on phagocytosis *in vitro* is a good index of the effect of that substance when used *in vivo*.

Arkin points out that the effects of an agent on the processes of immunity should be considered carefully when the use of that agent seems indicated in infectious diseases. The possibility of a combined therapy, consisting of the use of immune serums or vaccines together with certain drugs, suggests itself in the case of drugs which have themselves a stimulating effect on phagocytosis. The drugs may act as leukostimulants, or increase the production of antibodies, or combine with the antibodies to render them more active.

39. **Fusiform Bacillus Isolated from Blood-Stream.**—The authors claim that this is the first case on record in which the fusiform bacillus has been isolated from the blood-stream.

41. **Differentiation of Fecal Streptococci.**—From the results of the experiments cited by Fuller and Armstrong it appears that streptococci producing a high acidity in dextrose media are in general characteristic of human excreta. These strains which produce between 3.5 per cent. and 4.0 per cent. acidity in this medium are relatively abundant in human excreta. Dextrose fermenting strains are less abundant in the excreta of the horse and cow, and produce an acidity considerably less than that of the human strains.

Streptococci fermenting mannite are present in human feces in large numbers but are almost entirely lacking in the excreta of the horse and the cow. Strains fermenting dextrose, lactose and mannite (Andrewes and Horder's *S. fecalis*) comprise 65 per cent. of the cultures isolated from human stools, while only 1 per cent. of the strains from the horse and 2 per cent. of those from the cow are of this type. Streptococci fermenting lactose are comparatively rare in horse dung. Streptococci fermenting raffinose are abundant only in cow dung. Sixty-four per cent. of the strains isolated from this source ferment dextrose, lactose and raffinose (Andrewes and Horder's *S. salivarius*), 2 per cent. ferment lactose and raffinose, and 4 per cent. dextrose and raffinose. Streptococci of the salivarious type were not observed in human excreta, and comprised but 4 per cent. of the strains isolated from horse dung.

43. **Properties of Pneumonic Exudate.**—Hartman found that the addition of fatty substances and leukocytic extracts to fibrin does not increase its antigenic power. Leukocytic extracts, leukocyte residues, fatty substances from pneumonic exudates and from leukocytes (pus cells) cause non-specific binding of complement in the presence of some serums regardless of the reaction to the Noguchi test. Some specimens of pneumonic fibrin are themselves hemolytic. Fatty substances from pneumonic lungs and from leukocytes are hemolytic, but not anticomplementary in small quantities.

Normal fibrin and the non-hemolytic pneumonic fibrin, human serum, normal as well as pneumonic, inhibit the hemolysis induced by these fatty substances. The inhibitive power of the serum is contained in the globulin fraction precipitated by carbon dioxid. The four fractions of the fatty substances from pneumonic lungs and from leukocytes simulate those used as syphilitic antigen studied by Noguchi and Bronfenbrenner in their hemolytic, anticomplementary and antigenic powers. The leukocytic extracts vary to a considerable degree in their hemolytic, anticomplementary and antigenic properties. They do not serve as complement. The residues of leukocytes kept in glycerol are hemolytic and the hemolytic principles may be extracted by and demonstrated in alcohol. Extracts of leukocytes from patients with pneumonia are more strongly antigenic than those from pus-cells. The hemolytic substances associated with some pneumonia fibrin can be removed by alcohol, the alcoholic extract proving hemolytic. The anticomplementary power of normal fibrin is greatly increased by the addition of the fatty substances used in the experiments.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

November, V, No. 2, pp. 105-213

45 *Direct Application of Drugs to Temperature Centers. H. G. Barbour and E. S. Wing, New Haven, Conn.
46 *Paradoxical Action of Antipyrin in Partially and Completely Decerebrate Rabbits. H. G. Barbour and C. L. Deming, New Haven, Conn.
47 *Quantitative Studies on Gastro-Intestinal Absorption of Drugs. P. J. Hanzlik and R. J. Collins, Cleveland.

45. **Application of Drugs to Temperature Centers.** — The experiments described by Barbour and Wing show that the heat-regulating centers of the brain are *directly susceptible* to specific neuropharmacologic action. Besides the hyperthermiae which have previously been produced by stimulation of the region of the corpus striatum directly with puncture, electricity, cold and corrosive poisons, analogous stimulation with caffein and betatetrahydronaphtylamin can be demonstrated. Besides direct depression of this region by heat, one may obtain an analogous depression with chloral, antipyrin, quinin and under certain conditions epinephrin. Injected into the general circulation the minimal dose of chloral hydrate which causes a distinct temperature decrease is about 20 mg. per kilo animal. The chief factor appears to be muscular rest. The minimal dose of antipyrin to cause a distinct fall in body temperature is about 60 mg. per kilo. Three hundred mg. is necessary to cause marked respiratory increase. Given into the region of the caudate nucleus (and lateral ventricle), chloral hydrate in doses as small as 6 mg. per kilo or over gives a distinct temperature decrease. Hyperpnea and vasodilation seem to be important factors. Antipyrin in doses of 20 mg. per kilo and more gives a definite fall in body temperature with hyperpnea which appears to be the chief factor. Peripheral vasodilation, if present after this method, is very transitory. Strong alcohol, 25 per cent. or 95 per cent., in the lateral ventricle raises the body temperature as corrosives do. Five per cent. alcohol appears to have the opposite effect. Quinin hydrochlorid injected into the general circulation in doses of about 2 mg. per kilo gave a slow temperature fall of not more than 0.25 degrees. Doses ranging from 0.6 to 5.5 mg. injected directly into the brain gave falls of from 0.6 to 1.1 degrees with either vasodilation or hyperpnea or both. Epinephrin introduced into the brain of rabbits on winter diet always gave a fall in temperature in doses 1.01 and 0.1 mg. per kilo. No external cause was apparent. Caffein in doses of 0.6 to 1.2 mg. per kilo intracerebrally raises the body temperature usually 0.5 degree or more. Vasoconstriction and dilation of the pupils are noted, and sometimes signs of marked excitement. Similar doses in the general circulation have little or no effect on the body temperature. Betatetrahydronaphtylamin in the general circulation caused entirely without symptoms a rise of 0.5 degree within three hours after a dose of 0.02 gram. The same dose in the brain of a somewhat larger rabbit caused in an hour a rise of 1.1 degree with all the characteristic symptoms of this drug followed by convulsions and death.

46. **Paradoxical Action of Antipyrin.** — Rabbits normally respond to antipyrin, in doses of 0.1 to 1 gm. (sometimes as low as 0.06 gm.) per kilo animal, by a fall in body temperature with marked peripheral vasodilation, and, where the dose is above 0.3 gm., with hyperpnea. Doses in the neighborhood of 1 gm. per kilo may cause fatal convulsions. The cerebrum and corpus striatum were removed by Barbour and Deming from eighteen rabbits. In nine of these cases, being those exhibiting as a rule the fewest anatomic complications, a subnormal body temperature (32.5 to 37.5 degrees the morning after operation) resulted. The remaining nine animals (besides two of the first mentioned nine, for the first four days after operation) behaved essentially like normal animals. The hypopyrexia animals showed signs of collapse, asymmetrical muscular disturbances, peripheral vasoconstriction and slow respiration. Their temperature condition was not due to cold, starvation or hemorrhage but to a disturbance of central heat regulation, probably seated chiefly in the corpus striatum. When given 0.1 to 0.4 gm. (per kilo) antipyrin they showed a definite rise in temperature rather than a fall, and a conspicuous absence of the vasodilation usually seen after the drug, as well as of the hyperpnea which would be expected from the larger doses within this range. Muscle stiffness was in evidence, bordering, with the larger doses, on tonic and clonic convulsions. Animals completely decerebrated, including corpora striata and optic thalami, gave a temperature of 26.5 degrees to 32.5 degrees on the morning after operation. Antipyrin in doses below 0.33 gm. per kilo had no effect on these animals. Four-tenths gm. and above always gave a definite temperature rise. Neither vasodilation nor high respiratory rates were seen. Muscle stiffness or tetanic spasms were noted. The authors conclude that the reversed effect of antipyrin on body temperature in these cases is due to the normal heat-producing property of the drug. This property is brought into prominence by operative impairment of the heat-dissipating mechanism as well as of certain normal inhibitory influences which the higher centers exercise over the processes of heat production.

47. **Gastro-Intestinal Absorption of Drugs.** — Hanzlik and Collins found that the quantitative absorption of alcohol from the gastro-intestinal tracts of cats and dogs is practically identical. The absorption of alcohol from the stomach and small intestine of cats and dogs is about the same; from the colon about a fifth higher. The extent of the absorbing area does not markedly influence the intestinal absorption of alcohol. The absorption of alcohol is scarcely influenced by the concentration of the alcohol, although a 10 per cent. solution is absorbed somewhat better than 5, 50 and 95 per cent. solutions. The absorption of alcohol from the intestine of cats and dogs is practically arrested at the end of half an hour after injection. The inhibitory effect is of a local nature, since the presence of alcohol in one loop does not inhibit the absorption from adjoining loops. Under certain conditions inhibition may occur systemically. The intravenous injection of alcohol inhibits its absorption from the intestine. Inhibition of the absorption is not due to reexcretion. The percentage absorption of alcohol remains practically constant within wide variations of the systemic blood-pressure. Changes in the local circulation influence the intestinal absorption of alcohol. Injury to the intestinal mucosa lessens the absorption of alcohol.

The inhibition of the intestinal absorption of alcohol after intravenous injection is due to a slowing of the circulation in the intestine; no such change is demonstrable after local application of the alcohol. Such lipoidal substances as olive oil, cholesterin, lecithin, soap, bile salts and bile decreased the absorption of alcohol from the intestine of cats and dogs. The absorption of alcohol from the intestine after death averaged 17.6 per cent; from the stomach 27.1 per cent. Local "narcosis" of the intestine, and changes in the concentration of alcohol are not concerned in the inhibition of absorption. The authors conclude that the arrest of absorption is due to a retention or "binding" of a certain quantity of alcohol by the intestinal tissues.

Medical Record, New York

November 29, LXXXIV, No. 22, pp. 967-1012

48 Freudian Conception of Psychoneuroses. H. W. Frink, New York.
49 Scope and Technic of Psycho-Analysis. C. P. Oberndorf, New York.
50 Middle-Aged Woman. What Can be Done to Increase Her Efficiency? K. C. Mead, Middletown, Conn.
51 *Mechanism of Immunity in Experimental Cancer. I. Levin, New York.
52 Results of Treatment of Syphilis with Salvarsan and Neosalvarsan. S. H. Wadhams and E. C. Hill, U. S. Army.
53 Mortality Experience—Total Abstainers. R. I. Lounsberry, Binghamton, N. Y.
54 Benign Tumors of Female Breast; Report of Case of Adenofibroma. W. E. Hartshorn, New Haven, Conn.

51. **Immunity in Experimental Cancer.** — Levin's studies lead him to believe that Bashford's theory of a specific connective-tissue scaffolding has no general application in the explanation of cancer immunity. The conditions appear to be quite different when the tumor is inoculated directly into an organ instead of subcutaneously. In this case the first visible step is not the formation of a connective-tissue stroma, but

the inoculated cells immediately begin to proliferate and invade diffusely the normal tissue.

On the other hand, in an immune animal the tumor cells inoculated into an organ do not grow but die and are invaded by an extensive connective-tissue stroma like any other dead foreign body. Consequently, the immune organism does not lack the capacity to form connective-tissue scaffolding, and such an incapacity can no more be considered of a general importance in the elucidation of the phenomenon of immunity in experimental cancer than the lack of specific chemical food. Levin found that the inoculable tumors of the white mice and rats, as a general rule, grow just as well when inoculated into a parenchymatous organ as when inoculated subcutaneously. On the other hand, an animal resistant to a subcutaneous inoculation also resists an inoculation into an organ.

In his experiments with the Flexner-Jobling adenocarcinoma of the white rat, Levin noticed that while the tumor grows when inoculated subcutaneously or into any other organ in a large percentage of animals used, it does not grow when inoculated into a normal testicle. But when a testicle is treated previous to the inoculation either with an emulsion of Scharlach R in oil or an emulsion of ether in water, there takes place in the organ an inflammation accompanied with a proliferation of the intertubular connective-tissue, and then the inoculation of the same tumor into the organ becomes successful. The failure of the growth of the tumor in the normal testicle is not due to a general condition of the organism, but to a local action of the testicle on the tumor cells. The percentage of animals which are generally resistant to a subcutaneous inoculation is very small, and all the animals used for the inoculation into the testicle could not have been resistant to the growth of the tumor. Nor is it due to the mechanical influence of the tunica interfering with the expansion of the organ by the growing tumor, nor to the lack of specific food in the organism of the host. Investigations have shown that other inoculable tumors grow well in the testicle. The mechanism of this local resistance can be due only to an inhibitory action on the cells of this tumor of the cells of the tubules of the testicle. This investigation shows also that it is possible to render the same testicle artificially susceptible to the growth of the tumor.

In another more recent investigation Levin found again a striking proof of the possibility of a certain organ reacting differently toward the growth of an inoculable tumor than the rest of the organism. He repeated Uhlenhuth's experiments with the difference that the second inoculation was done not subcutaneously but into an organ. The results obtained coincided well with the results of Uhlenhuth. He then varied the experiments so that the second inoculation was not done in one organ, but in two organs—liver and spleen—simultaneously. The results obtained were quite unexpected. When the operation was radical and the subcutaneous tumor did not recur, then the secondary inoculation was not successful in any organ. On the other hand, when the operated subcutaneous tumor recurred then in a certain number of cases the secondary inoculation succeeded in both organs; in another series of experiments the secondary inoculation succeeded in one organ and failed in another. All these experiments show conclusively that the phenomena of immunity in experimental cancer cannot be explained by specific food relationship. There must exist a certain as yet unknown kind of an active inhibitory influence of the organism of the host on the cancer cells.

Missouri State Medical Association Journal, St. Louis

November, X, No. 5, pp. 155-190

55 Anxiety Neurosis and Its Treatment. G. W. Robinson, Kansas City.
56 Chemical Factors as Cause of Sterility in Female. G. Gellhorn, St. Louis.
57 Perinephritis. H. Jacobson, St. Louis.
58 Tuberculous Epididymitis with Report of Case with Treatment by Injections of Trypsin. H. M. Young, St. Louis.
59 Some Primitive Facts in Psychiatry. S. A. Johnson, Springfield.
60 Rectal Plug. R. H. Barnes, St. Louis.
61 Clinical Observations in Bacterial Therapy. J. D. Seba, Bland.

New York State Journal of Medicine, New York

November, XIII, No. 11, pp. 561-626

62 Present-Obligations of Physicians Regarding Syphilis, Both as to Patients and Public. E. W. Ruggles, Rochester.
63 *Pain and Other Clinical Manifestations of Myocarditis. A. Lambert, New York.
64 Accidental Wounds in Hernia Surgery. W. B. De Garmo, New York.
65 Twenty-Four Cases of Tumor of Bladder and Conclusions as to Appropriate Methods of Treatment. P. M. Pilcher, Brooklyn.
66 Social Pediatrics. I. S. Wile, New York.
67 Human Serum Treatment for Hemorrhagic Diseases of New-Born Infants. J. E. Welch, New York.
68 Some Moot Questions in Medical Education and Students' Ideals. H. L. Elsner, Syracuse.
69 Indications for Labyrinth Operation. F. Whiting, New York.
70 Central Laceration of Perineum. A. G. Swift, Syracuse.
71 Importance of Ophthalmologic Examinations in Immigrants. M. Cohen, New York.
72 Certain Neglected Aspects of Problem of Infant Mortality. P. Van Ingen, New York.
73 *Cardiac and Arterial Decompensation—Prevention and Treatment. L. F. Bishop, New York.
74 Central Scotoma and Blind Spot Anomalies; Their Clinical Significance. P. Fridenberg, New York.
75 Dysmenorrhea. J. H. Carstens, Detroit.

63 and 73. Abstracted in THE JOURNAL, May 10, pp. 1483 and 1484.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

November, XVII, No. 5, pp. 214-252

76 Reeducation of Disturbed Locomotion. A. Gordon, Philadelphia.
77 Solid Tumors of Submaxillary Gland. A. G. Brenizer, Charlotte, N. C.
78 Warning against Non-Scientific Diet Systems. M. J. Karpas, Washington, D. C.

Pennsylvania Medical Journal, Athens

November, XVII, No. 2, pp. 85-168

79 *Influence of Disease on Civilization. V. C. Vaughan, Ann Arbor, Mich.
80 Relation of Physician to Public Health Problems. J. D. Heard, Pittsburgh.
81 Tuberculosis Crusade. H. R. M. Landis, Philadelphia.
82 *Social Service and Physician, His Obligation and His Opportunity. J. C. Gittings, Philadelphia.
83 Practical Application of Social Service to Dispensary and Hospital Work. F. H. Klaer, Philadelphia.
84 Infant Mortality. C. A. Fife, Philadelphia.
85 *Care of Defectives. J. M. Murdock, Philadelphia.
86 Ludwig's Angina or Submaxillary Cellulitis with Extension to Floor of Mouth and Pharynx. T. T. Thomas, Philadelphia.
87 Treatment of Hernia. J. B. Carnett, Philadelphia.
88 Diagnostic Evidence of Gastric and Duodenal Ulcer as Shown by Roentgen Rays. G. E. Pfahler, Philadelphia.

79. Influence of Disease on Civilization.—Vaughan concludes as follows: In the future the training of the medical man must be developed largely with a view to his broader relations to the public. His proper function must be to prevent, rather than cure disease. The physician's duties are to become more and more largely official, in the sense that his services are to be rendered to the community, and not exclusively to the individual. Vaughan is quite sure that the time will come when people will go to the physician to find out whether they are really well or not, and not wait until they know they are ill. They will go for examination and advice, rather than for treatment. Ultimately the time will come when every one will be examined twice, or oftener, each year, and no two consecutive examinations will be made by the same physician. A record will be kept of each examination, and when the individual ultimately dies a careful autopsy will be held in every instance. At first these things will be voluntarily done by intelligent people and, later, others, seeing its advantage will adopt the rule. Finally, it will be compulsory with all, and will result in great good to the whole. The value of a custom of this kind in case of many of the infectious diseases, both to the individual and to the public, is evident.

82. Social Service Applied to Dispensary and Hospital Work.—Social service work in Klaer's opinion has come to stay. It has already regenerated outpatient departments so that this phase of hospital activity will soon take a position equal to that of the ward as a source of study or research, and a much more important place than the ward in the line of preventive medicine. It must, however, always rest on and be closely allied to the medical side of the work, and there must always be the closest cooperation between physicians and social workers, if both are to work for the best interests of the patient. Accurate diagnosis of medical conditions is absolutely essential to effective social service work. The graduate nurse will find a large field in certain special lines of social service, but even in these lines she must acquire the social service point of view, either by study or experience. In many phases of the work the nurses' training may be regarded as hardly necessary.

Physicians cannot afford to overlook this great auxiliary to hospital or outpatient treatment either in large or small hospitals. It is the department which makes effective the physicians' ideas and instruction and will bring about cures, where, without its help, failure is bound to follow. It will, moreover, be the department through which hospital efficiency may be checked up, and thus set or raise the general standards of this work.

85. **Care of Defectives.**—Sterilization, Murdock says, is at best a partial remedy, as in all probability only those in the scale so low in mentality that the likelihood of parenthood is extremely improbable would be reached. Sterilization is not actually operative in one of the eight states that have passed sterilization laws. Sterilization would not be a safe and effective substitute for permanent segregation and control, and it is to this permanent segregation and control that we must look as the rational policy for controlling feeble-minded.

Tennessee State Medical Association Journal, Nashville

November, VI, No. 7, pp. 253-299

89 Cerebrospinal Meningitis: Symptoms and Diagnosis. A. E. Thayer, Mobile, Ala.
90 Epidemic of Cerebrospinal Meningitis in Institution. T. Weaver, Nashville.
91 *Bacteriology and Pathology of Cerebrospinal Meningitis. W. Litterer, Nashville.
92 Tonsillectomy and Tonsillar Hemorrhage. R. McKinney, Memphis.
93 Surgical Theories of Intestinal Stasis. R. A. Barr, Nashville.

91. Abstracted in The Journal April 19, p. 1249.

Vermont Medical Monthly, Burlington

November, XIX, No. 11, pp. 261-286

94 Progress in Medicine and Public Welfare. J. L. Heffron, Syracuse, N. Y.
95 Pituitrin. E. J. Melville, St. Albans.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, London

November, VII, No. 3, pp. 359-479

1 Development of Human Trypanosome in Gut of Stomoxys Nigra. J. W. S. Macfie.
2 Case of Loa Loa. W. Rogers.
3 Recent Experimental Research on Blackwater Fever. J. O. W. Barratt.
4 Fictitious Native Disease (Isigwebedhla). G. A. P. Ross.
5 Vomiting Sickness in Jamaica. H. Seidelin.

British Journal of Children's Diseases, London

November, X, No. 119, pp. 481-528

6 *Diphtheria Bacillus and Scarlatinal Infection. T. S. Higgins.
7 Epidemic of Specific Parotitis in Schoolchildren. A. Graham.
8 *Intestine as Pathway of Infection to Tubercle Bacillus, with Special Reference to Part Played by Diarrhea. L. Findlay.

6. **Scarlatinal Infection.**—The fact that Higgins isolated typical bacillus diphtheriae from the scarlatinally infectious "primary" cases in 25 per cent. of instances, but only in 7 per cent. of those cases of scarlet fever whose return from hospital had not produced return cases, and in 7 per cent. also among normal schoolchildren, he thinks, seems to show that the presence of this germ in the nose or throat of patients with scarlet fever is often associated with a prolongation of the period of scarlatinal infectiousness, and that the presence of the germ is indicative of an increased probability of such infectiousness.

8. **Intestine as Pathway of Infection.**—Findlay found that healthy rabbits can be infected by the ingestion of large amounts of bovine tubercle bacilli. The bacilli can pass through the apparently intact intestinal mucous membrane and reach the mesenteric glands within a period of six days; this, however, does not frequently happen. When infection occurs the intestine is invariably the seat of lesions, and thus tuberculosis of any origin, other than the intestine, is always a secondary infection when the bacilli have entered by the intestinal route. Catarrh of the intestine does not favor the passage of the tubercle bacillus through the wall, but allows of a more constant, and also of an earlier and more widespread infection of the bowel, and in this way facilitates dissemination. Healthy rabbits apparently cannot be infected by the ingestion of large amounts of the human tubercle bacillus. Rabbits just recovered from intestinal catarrh developed tuberculosis after the ingestion of human tubercle bacilli. With the human type of organism a local lesion, though always present, may be slight in comparison with the diseased foci in the mesenteric glands. It would seem that the best means of combating the spread of bovine infection in childhood—until tuberculosis of cattle is eradicated—is in the avoidance of everything likely to cause intestinal catarrh.

British Medical Journal, London

November 15, II, No. 2759, pp. 1269-1340

9 Degeneration of Neuron in Light of Recent Research. F. W. Mott.
10 Relation of Internal Secretions to Female Characteristics and Functions in Health and Disease. W. B. Bell.
11 Epidemic Cervical Adenitis. J. G. Sharp.
12 *Treatment of Gonorrheal Epididymitis by Bier's Method. A. C. Wilson.
13 Dysentery. S. R. Douglas.
14 Diagnosis and Treatment of Epidemic Bacillary Dysentery. J. G. Willmore.
15 Morphology of Intestinal Amebae of Man. C. M. Wenyon.
16 Causes of Invaliding from Tropics. G. B. Price.
17 Some Recent Observations on Sprue. J. Cantlie.
18 Phlebotomus Fever and Dengue. C. Birt.
19 Filariasis. G. C. Low.

12. **Treatment of Gonorrheal Epididymitis.**—In applying passive congestion to a testicle for the treatment of gonorrheal epididymitis, Wilson uses a strip of lint 1½ inches wide, a fine piece of rubber tubing and a pair of Spencer Wells forceps. The cord on the affected side is encircled just above the testicle by the strip of lint, which is continued round between the two testicles along the median raphe of the scrotum. Over the lint is applied the rubber tubing, which is tightened to the required extent and secured by artery forceps. (The required extent being such that no pain results after the application; instead, the patients describe a comfortable warming sensation with immediate relief of pain.) Pain after application implies that the tubing is too tightly applied, and suggests that it should be loosened. A few moments after adjustment the enclosed tissues assume a purple color resembling a ripe plum. The treatment is applied for an hour the first day, where possible, increasing daily up to eight hours. But in some very acute cases half an hour will be all that the patient can stand at first. Where practicable, however, Wilson says it will be found that the duration of disease is in inverse ratio to the length of daily application of treatment.

Glasgow Medical Journal

November, LXXX, No. 5, pp. 321-399

20 Byzantine Medicine: Finlayson Memorial Lecture. T. C. Allbutt.
21 Dilatation of Stomach. A. E. Maylard.
22 Treatment of Hemoptysis in Pulmonary Tuberculosis. J. W. Allan.

Indian Medical Gazette, Calcutta

October, XLVIII, No. 10, pp. 377-416

23 Some Uses of Modified Purin-Free Diet. A. Hooton.
24 Relapsing Fever in Chitral with Account of Successful Animal Inoculations. C. H. Smith and G. F. Graham.
25 Delayed Chloroform Poisoning. D. Munro and A. D. White.
26 Use of Scopolamin-Morphin and Atropin in Preventing Shock during Chloroform Anesthesia. J. J. F. Dunn.
27 Intestinal Obstruction and Scurvy. A. L. Sheppard.
28 Is Syphilis a Factor in Blackwater Fever? A. H. Napier.
29 Some Excisions of Thyroid, Performed at Sree Sree Sree Bir Hospital, Nepal (Khatmundu). S. C. Das Gupta.
30 Case of Myelocythemia. B. Das.
31 Use of Chionanthus Virginiana in Diseases of Liver. F. Roux.
32 Round Worms and Pregnancy. T. G. S. Row.

Journal of State Medicine, London

November, XXI, No. 11, pp. 641-704

33 Lighting in Industrial Occupations. L. Gasser.
34 Sporotrichosis. Gougerot.

35 Salvarsan and Neosalvarsan in Treatment of Syphilis. T. B. Shaw.
36 Cholera Elective Culture Medium. A. Dieudonne and K. Baerthlein.
37 Eye-Strain among Naval Ratings. W. A. Whitelegge.
38 School Planning, with Special Reference to Prevention of Consumption. S. Barwise.
39 Value of Autoclave in Sterilization of Anhydrous Oily Substances. H. Bullock.

Lancet, London

November 15, II, No. 4704, pp. 1367-1440

40 Degeneration of Neuron in Light of Recent Research. F. W. Mott.
41 Gonorrhea Phylacogen. L. W. Harrison.
42 Small Epidemic of *Poliomyelitis*. P. B. Roth.
43 Outbreak of Acute Anterior Poliomyelitis at West Kirby. G. Jubb.
44 Two Cases of Ascites Treated by Multiple Paracentesis and by Femoral Drainage. W. G. Nash.
45 *Polyvalent Tuberculin and Types of Temperature Reaction; New Technic. H. Sutherland.
46 Tubal Gestation Continuing to Sixth Month after Rupture at Sixth Week. R. Nairn.
47 *Diagnostic Value of Abderhalden's Method in Carcinoma. R. St. L. Brockman.
48 Five Cases of Porocephaliasis in Man from Southern Nigeria. J. W. S. Macfie and J. E. L. Johnston.

45. **Polyvalent Tuberculin and Types of Temperature Reaction.**—A rise of temperature, even of half a degree Fahrenheit above the mean, occurring within seventy-two hours of an injection of tuberculin, Sutherland maintains, is to be regarded as a reaction. A rise of temperature reaching its maximum within twenty-four hours of an injection is an immediate reaction, and may occur four hours after the injection. A rise of temperature reaching its maximum within forty-eight hours of the injection is a delayed reaction. A rise of temperature reaching its maximum within seventy-two hours of the injection is a progressive reaction. In their order of severity these types of temperature reaction are as follows: (a) immediate reaction with a fall by crisis—increase dose; (b) delayed reaction with a fall by crisis—repeat dose; (c) immediate reaction with a fall by lysis—reduce dose by one-fifth; (d) progressive reaction with a fall by crisis—reduce dose to one-tenth; (e) progressive reaction with a fall by lysis—stop tuberculin.

47. **Abderhalden's Method in Carcinoma.**—There is, in Brockman's opinion, sufficient evidence to show that the blood of persons suffering from carcinoma contains a substance absent in the blood of all others, and that this substance has a proteolytic action on the carcinoma tissue only. There are also several factors which point to its being of the nature of a ferment. If the serum from a patient is left to get stale it becomes inactive, but the addition of a trace of fresh human serum will activate it again. The reaction takes place best at 37 C. At room temperature the reaction does not occur, while heating the serum to 55 C. for five minutes inactivates it beyond recall. If, then, as is maintained, this substance is of a protective nature, it would be natural to expect to find it present in larger quantities in patients who were in good general health. The results of these tests point strongly to such being the case. Brockman has noticed throughout the whole series that a patient with a growth of the tongue or of the breast who is in good general condition will give an intensity of coloration in twelve hours which a patient in a low state of health would fail to give in twenty-four hours.

Annales de l'Institut Pasteur, Paris

October, XXVII, No. 10, pp. 797-892

49 Vaccination with Sensitized Virus *against* Sheep-Pox. J. Bridré and A. Boquet.
50 Undulant (Malta) Fever in Algiers in 1912. J. Séjournant.
51 Acute Epidemic Poliomyelitis. II. (Etat refractaire et propriétés microbicides du sérum.) C. Kling and C. Levaditi. See editorial p. 1904.
52 Assimilation of Saccharose by Bacteria *of* the B. Subtilis Group. (Fermentation butylèneglycolique.) M. Lemoigne.
53 Action of Bile on Pneumococci. C. Truche, L. Cotoni and A. Raphael.

Archives Générales de Chirurgie, Paris

October, VII, No. 10, pp. 1153-1280

54 *Pain and the Surgeon. (La douleur en chirurgie.) L. Picqué.
55 Dislocation of the Wrist. (Les luxations dorsales de l'extrémité supérieure des métacarpiens dans leurs articulations avec le carpe.) M. Bergasse and M. Guilmain.
56 Spontaneous Dislocation in Joint Disease. (Les luxations spontanées vraies dans la tuberculose articulaire et dans les arthrites en général.) P. Bertein.

54. **Pain from the Surgical Standpoint.**—Picqué comments on the comparatively slight attention paid to pain by the surgeon, urging that study of the pain is liable to prove a useful guide in various ways. He states that he knows of only one article on pain written by a surgeon in recent years. Richet, the physiologist, to whom a Nobel prize has been awarded, declares that the capacity for feeling pain is more developed in proportion to the development of the mind, and he regards pain as the fundamental element in human progress. Picqué defines pain as generally merely the special perception of some peripheral organic trouble. As a rule, the comparatively insignificant lesions are the ones that induce the severest pains. By comparing the subjective with the objective findings it is possible to determine to what extent the mind participates in causing the pain. Championnière has warned that the surgeon in his examination may create pain for the first time, and that once thus inaugurated, the pain may persist indefinitely. The questions of the physician are liable likewise to call pain into existence or first cause a realization of existing slight pain.

Archives de Médecine des Enfants, Paris

November, XVI, No. 11, pp. 801-880

57 *Uremia in Children. (Signification clinique de l'azotémie chez les enfants.) P. Nobécourt.
58 Radioscopy of Tracheobronchial Lymph-Nodes in Children. D'Oelsnitz and Paschetta.
59 The Intradermal Reaction to Injection of Serum. (La réaction sérique intracutanée.) J. Michiels.

57. **Uremia in Children.**—Nobécourt declares that the pediatrist should apply in his practice the various means of investigation used for adults but he should beware of applying to a child the conclusions drawn from the responses in adults. Uremia, for instance, in older children as with adults, is a consequence of nephritis. But the highest proportions of urea in children in his experience were found with acute and transient nephritis. The prognosis is less favorable when the urea is mild but persisting, this chronic character suggesting a profound and progressive lesion in the kidney. In infants and young children nephritis is less often responsible for the uremia; it appears in acute gastro-intestinal disturbance and bronchopneumonia. High azotemia, unless briefly transient, seems to be the chemical substratum, he says, of athrepsia. The discovery of urea persisting in the cerebrospinal fluid, even in a low percentage, indicates a grave prognosis. Urea up to 0.5, 0.7, 1 or 3 gm. was found in the cerebrospinal fluid of eleven out of eighteen infants with athrepsia; the proportion varied, but the findings were constantly positive till death. Necropsy revealed no signs of tuberculosis or syphilis, while in another series of tuberculous or syphilitic infants, some with pneumonia or digestive trouble, the urea content was constantly normal or below. The athrepsic babies present the uremic syndrome similar to that in adults: gastro-intestinal disturbances, lack of appetite, progressive emaciation and torpor. Uremia in infants may be accompanied by symptoms on the part of the nervous system suggesting meningitis but differing in that the gaze is not so fixed and there is myosis instead of the mydriasis of meningitis. A negative tuberculin reaction also speaks against meningitis.

Bulletin de l'Académie de Médecine, Paris

October 14, LXXVII, No. 31, pp. 209-222

60 *Training the Muscles of the Ear in Treatment of Deafness. (Du traitement de la surdité par la gymnastique auriculaire et les exercises acoustiques.) M. Fernet.

October 21, No. 32, pp. 223-283

61 Sexual Perversions a Form of Disease. (Inversion sexuelle et pathologie mental.) P. Ladame and Magnan.

October 28, No. 33, pp. 284-323

62 Epileptic Myoclonus. Four Cases. Oddo and Corsy.

60. **Warding Off and Treatment of Deafness by Exercising the Muscles of the Ear.**—Fernet ascribes the benefit from exercising an organ to the consequent improved circulation and better nourishment, enabling it to throw off traces of pre-

ceding disease, and to the better adaptation to its function progressively acquired by practice, but, above all, to the training of the auxiliary organs which sustain and reenforce the lagging organ.

Functional reeducation based on these principles has been successfully applied in treatment of the infirmities in chronic rheumatism and tabes, but the prospects are still more promising in training the hearing in case of encroaching deafness in the elderly or after otitis media. The muscles of the outer ear and middle ear and of the eustachian tube are generally supposed to be beyond the control of the will, but children can frequently voluntarily move the ears and part of the scalp and some become quite expert at it. Fernet thinks that this faculty is lost simply from lack of exercise in adults, but if it can be acquired anew the muscles of the internal ear, which probably share in the movement of the outer muscles, will be effectually exercised. All the above muscles are innervated by the facialis nerve, which explains their concerted action. Even if only one of the above muscles can be exercised, the benefit will extend throughout the whole group of muscles as others contract with it. When only one ear is deaf, the individual generally uses the good ear exclusively, leaving the deaf ear to atrophy and the spark of hearing left soon dies out; if the ear were systematically trained to listen the spark might be kept alive and grow brighter.

The exercises of the muscles may be done in three series, those of the face, then the scalp and auricle, and lastly, those of the eustachian tube. The first series is mainly by grimaces of the face, contracting in turn the muscles of the lips, nostrils, eyelids, doing the exercises slowly and repeating them, aiming to reach the ear. Medical men knowing the anatomy of the parts can train their muscles very effectually in this way; others need a monitor to show them how. With a little training one can learn to move the scalp; especially if it is loosened with a little massage beforehand. The frontal and then the occipital muscles can be contracted alternately, forcing the top of the scalp back and forth, and then the muscles above, behind and in front of the ear. A series of these exercises gives one an unmistakable impression that the depths of the ear are roused from their torpor and that the sound waves have better access. The muscles of the eustachian tube are exercised by a kind of swallowing movement with simultaneous contraction of the muscles of the upper pharynx and velum. A deep inspiration followed by an abrupt expiration through the nose ventilates the tube, and other exercises aid in training the muscles of the tube as they move in concert with adjacent muscles.

The hearing proper should be exercised and trained. Listen with the deaf ear, the ear that hears most defectively; listen the harder with it because it is sliding down into deafness. Fernet's methods have proved very useful in many cases, especially in those in which the trouble in hearing is connected with transmission of sound waves by the middle ear—the most common cause of deafness. Physicians particularly need good hearing, and instead of accepting deafness with the fatalism of the oriental, they should rouse up and fight it.

Presse Médicale, Paris

November 5, XXI, No. 90, pp. 897-904

63 Diagnosis from the Stool of Ulcerations in the Gastro-Intestinal Tract. R. Goiffon.
64 The Antigen in the Wassermann Reaction. A. Desmoulière.

Revue de Gynécologie, Paris

XXI, No. 4, pp. 257-352

65 *Pathologic Anatomy of Tumors in the *Breast*. A. Gosset and P. Masson.
66 Diffuse Adenoma of the Cornua of the Uterus. J. Caraven and P. Merle.

65. **Mammary Tumors.**—Gosset and Masson state that cystic disease of the breast unquestionably predisposes to cancer. Microscopic examination in cystic disease of the breast may reveal the cancer in its earliest incipiency and thus permit a truly radical cure. Among the seventy-five cases reported and compared, cancer had developed in the cystic affection in twenty-nine cases of cystic disease of the breast. Only three were found free from cancerous degeneration. The tumor was an epithelioma in fifty-two of the seventy-five cases, including twenty-five with preceding cystic disease, and three with tuberculosis.

Archiv für klinische Chirurgie, Berlin

CII, No. 4, pp. 861-1105. Last indexed Dec. 6, p. 2109

67 *Operations on the Brain. (Zur Gehirnchirurgie.) A. Stieda.
68 *Plastic Operation on the Esophagus. A. Stieda.
69 Experiences with Rosenbach's Tuberculin in Surgical Tuberculosis. R. Lichtenstein.
70 Appendicectomy; *308 Cases.* P. Zander.
71 Experiences with Pantopon-Scopolamin General Anesthesia. M. Nentwig.
72 Patent Omphalomesenteric Duct. K. E. Veit.
73 Etiology of Caput Obstipum. K. E. Veit.
74 Tuberculosis of the Bursas in the Hip. (Tuberkulose der Schleimbeutel der Hüftgegend.) J. Becker.
75 *Invagination of the Intestine in Children. J. Becker.
76 Traumatic Dislocation of the Hip Joint in Children. E. Boehnke.
77 Traumatic Central Dislocation of Head of Femur. W. H. Loepp.

67. **Surgery of the Brain.**—Stieda describes in detail the case of a girl of 5 from whose brain a tumor as large as a hen's egg and weighing 125 gm. was removed over a year ago. The symptoms improved remarkably or subsided entirely. This case and several others he reports teach the necessity for operating for brain tumors at two sittings and under local anesthesia, never tamponing or draining; if a plastic operation is necessary, fascia from the thigh is the best material for the purpose. Severe bleeding can be arrested easily and promptly by pressing with scraps of muscle. The case of a young woman is described who has very little disturbances of any kind to show at present, eight years after a partial operation on a glioma in the left central lobe near the center for the arm. As the growth was not circumscribed, it could not be entirely removed; a piece 2x3 cm. was cut out. The tumor has evidently retrogressed during the eight years since to a remarkable extent.

68. **Plastic Operation on the Esophagus.**—The young woman in the case described drank sulphuric acid with suicidal intent, and Stieda gives an illustrated description of the technic with which he later provided her with a new esophagus, made from a skin flap and connected with the stomach by a stout rubber tube, pushed up tight into the lower end of the new esophagus.

75. **Invagination of the Intestine in Children.**—Becker reports twelve cases he has encountered in the last ten years, all chronic but four. In the four acute cases the children were from 5 months to nearly 4 years old and three died. The only child that recovered was the only one treated by rectal injections alone. In the eight chronic cases, that is, with invagination for more than five days, five of the children died. His experience has convinced him that the proliferation of bacteria and production of toxins in the invaginated intestine are what reduces the resisting powers to such a low ebb. The aim in treatment should be to get rid of this source of intoxication as soon as possible, and this is best accomplished, he thinks, by resection of the invaginated portion, followed by entero-anastomosis. The earlier the operation is done the better the results with children over a year old.

Beiträge zur klinischen Chirurgie, Tübingen

September, LXXXVI, Nos. 2-3, pp. 265-555

78 Operative Treatment for Disturbance of Vision with Steeple-Skull. (Grundlagen und Methoden der operativen Behandlung der Sehstörungen beim Turmschädel.) H. Schloffer.
79 Advantages of Ligation of Ileocolic Vein with Mesenteric Pyemia after Appendicitis; *Eight Cases.* H. Braun.
80 Solitary, Non-Parasitic Cyst in Liver; Thirtieth Case on Record. E. Sonntag.
81 *Stoffel's Operation for Spastic Paralysis. E. Bundschuh.
82 Suture of Stab-Wound of Heart; *Two Cases.* (Stichverletzung des Herzens durch Herznaht geheilt.) A. Nast-Kolb.
83 *To Avoid Disturbances in Circulation after Ligation of Iliac Artery. (Zirkulationsstörungen an der unteren Extremität nach Unterbindung der Arteria iliaca communis und der Arteria iliaca externa.) F. Strauss.
84 *Spiral Incision in Treatment of Varices or Leg Ulcers. Five Cases. F. Rauch.
85 Roentgen Stereoscopy in Localization of Foreign Bodies. (Lagebestimmung von Fremdkörpern mit Hilfe des Stereo-Röntgenverfahrens.) L. v. Holst.

86 End-to-End Suture of Vessels by Technic that Enlarges the Lumen. (Eine das Lumen der Gefässanastomose erweiternde Methode der Venennaht.) N. Dobrowolskaja.
87 Changes in Blood and Blood-Producing Organs after Amputations and Exarticulations; Experimental Research. W. Schaack.
88 *Thymus and Thyroid in their Reciprocal Relation to Exophthalmic Goiter. (Thymus und Schilddrüse in ihren wechselseitigen Beziehungen zum Morbus Basedowii.) W. Capelle and R. Bayer.

81. **Operation on Peripheral Motor Nerves for Spastic Paralysis.**—Bundschuh has applied in three cases Stoffel's method of weakening the contracted muscle by severing certain of its nerve fibers. The stretch innervated by these fibers ceases to be contracted after they have been divided, and flaccid paralysis of this stretch takes the place of the former contracture. The muscle by this means loses its excessive nervous energy and the normal balance between it and the antagonist muscle is restored. Bundschuh's patients were 3 and 12 years old, with Little's disease or paralysis from early encephalitis. In two of the children the results are highly satisfactory but in the other the triceps surae was evidently not weakened quite enough, and there is still some contracture of the foot which it is proposed to correct later. He emphasizes that the aftercare must be regarded as of equal importance with the operation. Intelligent cooperation on the part of the family is indispensable.

83. **Ligation of Iliac Artery.**—Strauss relates a case in which gangrene developed in the leg after ligation of the external iliac artery under aseptic conditions and with no complications; the artery had required ligating on account of its tearing from traction of adhesions during an operation for inguinal hernia in a man of 70. He says that this occurs so rarely after ligation of the external iliac, in comparison with ligation of the common iliac artery, that the former deserves the preference in all possible cases. The ability to bear ligation without gangrene depends on the functional capacity of the heart, and this should be carefully estimated beforehand. Korotkow's test has proved very useful for this when considering an operation for aneurysm: He compresses the artery above the aneurysm and determines the blood-pressure with the manometer applied below, to the toes, for instance. This permits estimation of the force of the collateral circulation and thus warns of a predisposition to gangrene in case it is found low. If compression is applied above and below the lesion, thus excluding this stretch from the circulation, the blood-pressure at the toes will be approximately what it would be after the stretch of artery had been resected.

84. **Spiral Incision for Varices.**—Rauch says that the results in two of his five cases were most excellent; there has been no recurrence during the years since of the extensive varices and torpid ulcers with elephantiasic changes in the skin. Both these patients had been previously treated by other measures, including operative, but without result, and both had their earning capacity restored in two and a half and three and a half months, by the spiral incision. In the other cases the complete procedure could not be applied and the results were less perfect, but full earning capacity was regained in seven to twelve weeks. The operation is severe and necessarily accompanied by considerable loss of blood so that it is indicated only in the extremely rebellious cases of varicose enlargement of veins. Rauch cites in conclusion the surprisingly favorable results found by Geinitz on a recent reexamination of six patients on whom he had performed the spiral operation nearly two years before.

88. **The Thymus and Thyroid in Their Reciprocal Relation to Exophthalmic Goiter.**—This long article is accompanied by six large charts showing the minute results of the investigations reported, besides five pages of schematic representation of conditions in a number of clinical cases. The data presented seem to show that the thymus and thyroid in exophthalmic goiter work in harmony to a certain extent, but in other points they work against each other. The writers, Capelle and Bayer, were the first to call attention to the possibility that a thymectomy may have as favorable an influence as thyroidectomy in certain cases of exophthalmic goiter. They report a new case of this kind: A woman of 27 developed the symptoms of Basedow's disease in a severe form; palpitations, tremor, diarrhea with vomiting, loss of 24 pounds in three months, the hair falling out, the menses suspended, and the neck growing a very little larger. There was only slight tendency to protrusion of the eyeballs, but they had a peculiar stare. The thyroid showed remarkably slight changes and the severity of the clinical symptoms in comparison with the almost entirely normal aspect of the thyroid suggested that the thymus might be responsible for the syndrome. Roentgenoscopy and palpation rendered a persisting thymus almost certain, and it was removed. Prompt improvement followed; the woman gained 6 pounds in three weeks, menstruation became normal, the pulse dropped from 130 to 95, and the condition now, five months later, may be regarded as practically normal. The thymus was not materially enlarged but showed some hyperplasia of the medulla, less of the cortex, while the content in eosinophil cells was high.

The tables of the metabolic findings in a number of typical cases confirm the assumption that the thymus and thyroid may both be incriminated in Basedow's disease, and that the symptoms vary as one or the other predominates in the production of symptoms. The data presented seem to show that the predominance of symptoms for which the sympathetic nervous system is responsible points to the thyroid as chiefly to blame, while the predominance of vagus symptoms points to the thymus. In dubious cases the simpler operation, thyroidectomy, should be done, but if symptoms persist the thymus should be resected also. In a case with much exophthalmos, much excited heart action, with tendency to fluctuations of temperature and trophic disturbances, the trouble can be referred to the thyroid. On the other hand, in cases with only slight protrusion of the eyeballs, with pronounced subjective heart disturbances but the pulse not altered to correspond, with sweats, diarrhea and dyspepsia dominating the clinical picture, the blood modified according to the Kocher type, and there is an area of dulness over the thymus region and a tendency to myasthenia—this clinical picture incriminates the thymus, and thymectomy should be done first if the thyroid shows no changes proportional to the severity of the Basedow picture. They have operated in three cases on these presumptions, and two of the patients were practically cured; the third died from cardiac paralysis half an hour after the operation. They report further trials of organ therapy, thymus and ovary tissue, but their experiences have been too few for conclusive judgment.

They report further some experiments with injection of epinephrin in Basedow patients to determine whether the sympathetic or vagus nerves were predominantly involved; the findings are compared with those in healthy persons. They gave a subcutaneous injection of 0.001 gm. epinephrin and repeated in half an hour. A response with profuse sweating, palpitation and tremor was always obtained in the severe cases, as also polyuria and glycosuria. When the sweating, polyuria and glycosuria are extremely pronounced, the sympathetic system is mainly involved. The blood changes also under the epinephrin. The condition returns to normal more promptly in the sympathetic system cases; the lack of repair seems to characterize the vagus cases.

Berliner klinische Wochenschrift

November 4, L, No. 44, pp. 2025-2072

89 *Tumors in the Cerebellum. (Erfahrungen bei Operationen von Kleinhirngeschwülsten.) H. Oppenheim and M. Borchardt.
90 *Deformity of Femur after Fracture. (Einige seltene Erkrankungen des oberen Femurdrittels.) G. Axhausen.
91 Experimental Syphilis. (Weitere Mitteilungen über Ergebnisse der experimentellen Syphilisforschung.) P. Uhlenhuth and P. Mulzer.
92 *Exanthematous Typhus. (Fleckfieber.) C. Hegler and S. v. Prowazek.
93 Tube-Casts in Urine. (Cylinder and Cylindroide.) C. Posner.
94 *Determination of Iodin in the Urine. (Nachweis von Jod im Harn.) F. Lesser.
95 Spastic Contracture from Phylogenetic Standpoint. A. Langgaard.
96 *By-Effects of Arsenic and Salvarsan. (Nachtrag zu meinen Arbeiten über die Nebenwirkungen des Salvarsans.) R. Obermiller.

89. **Cerebellum Tumors.**—Oppenheim and Borchardt recently demonstrated a robust young man of 22 in apparently good health, except that vision in one eye is reduced somewhat and when the eyes are shut there is slight staggering. Fifteen months before they had removed a fibrosarcoma from the vermiform process of the cerebellum; it was not circumscribed and considerable portions of the process had to be cut out. The part left was vigorously cauterized. Two previous attempts during the preceding six weeks had had to be interrupted on account of collapse, and after the main operation artificial respiration had to be kept up with brief intervals through the day and next night. The respiration stopped at times completely and then alternated with Cheyne-Stokes with persisting tracheal râles; the pulse kept good. After twenty-four hours the respiration proceeded naturally once more but then the heart repeatedly seemed to be failing. This was successfully combatted with camphor and caffein. The two-hour operation was done under local anesthesia, with a few whiffs of ether at times when the patient complained of discomfort from the position of his head. An equally favorable outcome is reported in the case of a child of 7 who had a tumor the size of a walnut removed from the right hemisphere of the cerebellum. It had already entailed total amaurosis. Eighteen months after the operation the girl is not only in perfect general health but vision has returned so she can count fingers at half a meter. This is the only case of restoration of vision which Oppenheim has encountered.

90. **Acquired Deformity of the Upper Femur.**—Axhausen gives an illustrated description of some cases of tumefaction in the upper femur of various origins. The trouble was a fibrous ostitis in some cases; it was restricted entirely to this one site, and was of several years' standing, up to twenty years in one case. Operative measures seem indicated in such cases and are generally required by a spontaneous fracture sooner or later. The Wassermann will exclude syphilis if there is an unfounded suspicion that the trouble is a syphilitic bone lesion. In another case the trouble in the upper end of the femur in a woman of 71 proved to be a circumscribed focus of severe, pure osteomalacia; *no other bones were affected.* This is the first instance on record, he thinks, of an extremely severe form of osteomalacia restricted to one bone. In two other cases the large tumor had developed after a fracture but it simulated malignant disease; the patients are both living, several years since the examination. This excludes cancer; the trouble is probably merely excessive callus production at the site of an old fracture; both patients are tabetic.

92. **Exanthematous Typhus.**—Few persons nowadays have had such experience with this disease as Hegler and Prowazek, who studied it in four immigrants at Hamburg and then in hundreds of cases in Servia during the Balkan War. The blood was examined with special care and certain changes were found which are apparently typical; they were never found in the blood of typhoid or measles patients. The disease does not seem to be transmitted by direct contact but all their experiences confirmed transmission by the louse. Inunctions with eucalyptus oil regularly before entering the typhus hospital protected them against the disease, aided by the fact that the patients had all been freed from vermin on entering the hospital.

94. **Simple Test for Iodin in Urine or Saliva.**—Lesser stirs with the end of a match a little calomel into a few drops of the urine on a slide or card. If it contains iodin, the calomel turns bright yellow. Iodin in the saliva is shown up in the same way if the patient spits on a little calomel. This calomel test, he says, is extremely delicate and reliable. Another way to reveal the presence of iodin is by touching the tongue with a silver nitrate stick. The white mark left by the caustic is not white but yellow in case the individual has been taking iodin.

96. **By-Effects of Salvarsan.**—Obermiller ridicules the attempts to explain the mishaps after salvarsan by attributing them to anything except the toxic action of arsenic which salvarsan shares with all other preparations of arsenic.

Deutsche medizinische Wochenschrift, Berlin

November 6, XXXIX, No. 45, pp. 2177-2232

97 Cosmetic Dermatology. III. (Pigmentanomalien: Ephelides, Lentigines, Chloasma, Vitiligo.) E. Kromayer.
98 Early Stage of Atrophic Alopecia. (Pseudopelade Brocq.) W. H. Dreuw.
99 *Hyperemia Treatment of Inflammatory Processes in the Urinary Passages. E. R. W. Frank.
100 Functions of the Prostate. J. Jacobsohn.
101 *Indirect Radiotherapy for Enlarged Prostate. J. Jacobsohn.
102 Calcium and Magnesia in Therapeutics; Experimental Research. M. Kochmann.
103 Pneumonia and Cardiac Defects. O. Keller.
104 Bile Culture Medium for Diphtheria Bacilli. (Erfahrungen mit dem Galle-Diphtherienährboden nach v. Drigalski und Bierast.) F. C. R. Schulz.
105 Treatment of Trachoma. (Zur Behandlung der schweren Körnerkrankheit.) Rau.
106 Blood-Findings in Exanthematous Typhus. (Hämatologische Diagnose des Flecktyphus.) M. Rabinowitsch.
107 Child Labor. (Die hygienische Seite der gewerblichen Kinderarbeit.) W. Hanauer.

99. **Hyperemia in Treatment of Disease in the Urinary Passages.**—Frank refers in particular to inflammation with infiltration, and says that nothing loosens up the tissues and promotes absorption so effectually as the application of local heat. For several years he has been working to perfect appliances to induce local hyperemia, and here gives an illustrated description of a number of them. They are connected with an ordinary electric-light wire with a thermometer to regulate the heat. Patients bear without discomfort a temperature of 55 C. in the urethra, and the catheter can be left in place at this temperature for twenty-five or thirty minutes. The relief of pain is marked, and he states that under all circumstances a warm catheter can be introduced much easier than one at ordinary temperature. He has found that some patients otherwise requiring local anesthesia before the catheter can be introduced readily bear the introduction of a catheter heated to 30 or 40 C., and the dilatation can be carried much farther with heated catheters. He was one of the first to recognize the advantages of Bier's hyperemic treatment for urologic practice, and five years' experience has only confirmed its importance. The appliances described adapt it for various organs, and the pathologic changes retrogress much more rapidly, he declares, more certainly and more completely than is possible otherwise. He adds that Bier's hyperemic treatment registers its finest successes in treatment of chronic inflammatory processes in the urinary and sexual organs, reducing the pain, destroying bacteria or attenuating them, while promoting absorption and resolution and better nourishment of the parts.

101. **Enlargement of the Prostate.**—Jacobsohn argues that the prostate and seminal vesicles are cooperative organs, and he believes that it is possible by influencing the seminal vesicles to act indirectly on the prostate. He sought to accomplish this by radio-active treatment of the seminal vesicles, and reports three cases in detail in which the moderately enlarged prostate subsided enough, in two, to permit practically normal bladder functioning. The prostate materially retrogressed in the other case after ten exposures, but the bladder function is not improved as the disturbances were of many years' standing in a decrepit man of 78. Jacobsohn thinks that this indirect radiotherapy of hypertrophy of the prostate has a promising future and a logical basis in the physiologic connection between the accessory sexual glands.

Medizinische Klinik, Berlin

November 2, IX, No. 44, pp. 1793-1836

108 *Intestinal Auto-Intoxication and Its Treatment. E. Roos.
109 Effect of Papaverin on the Smooth Muscles. (Ueber die Papaverinreaktion der glatten Muskeln, ihre diagnostische und therapeutische Verwertung.) J. Pal.
110 *Importance of the Abderhalden Serodiagnosis for Internal Medicine. J. Bauer.
111 Reaction to Intravenous Injection of Arthigon in Gonococcus Infection. R. Frühwald.
112 *Perforation of Gastric Ulcer Closed by Adjoining Organ. (Zur Frage der gedeckten Magenperforation.) J. Schnitzler.
113 Influence of Age on Development of Cancer. A. Theilhaber.
114 *Radial Paresis from Lead Poisoning. H. Zondek.
115 Advantages of Giving Bromids in Capsules that Pass Through the Stomach Unmodified. (Zweckmässige Form der Bromdarreichung.) P. Jödicke.
116 Sugar Content of Transudates and Exudates. C. Hegler and O. Schumm.

108. **Intestinal Auto-Intoxication.**—Roos regards the toxins produced by bacteria in the intestines as the ones responsible for the symptoms of what we call intestinal auto-intoxication. He says that Strassburger found that a fifth of the dry substance of the stool is often composed of bacteria, and in pathologic conditions without much diarrhea the amount may be more than twice this. Roos used lactic acid bacilli in treatment of rebellious constipation before Metchnikoff published his works on the subject, and he states that the benefit from this has long been known empirically; acid fruits, vegetables or milk containing lactic acid and lactic bacilli have been found particularly wholesome for ages in all parts of the world. Peoples that consume much milk are generally exceptionally robust and long-lived. Milk becomes acid during lactic acid fermentation, while meat under the same condition putrefies; sugar protects organic substances against putrefaction. White cheese has a marked effect in reducing putrefaction in the intestine; Baumann presented evidence that the ethereal sulphates—products of intestinal putrefaction—are materially reduced when white cheese is eaten. Pure casein does not have this property. The white cheese probably takes the milk sugar with it into the lower parts of the bowel. Roos remarks that Metchnikoff's new treatment with the peptolytic glycobacterium, to be taken with considerable potato, forms a new method of treatment which is closely analogous to a dish very popular in Roos' country, namely, boiled potatoes with sour milk-sauce (*gesottene Kartoffeln mit Sauermilch*). Here again, he exclaims, as so often happens, observation and experience, empiricism, have long preceded the scientific explanation of the facts observed.

Abnormal bacterial transformations in the intestines may be combated by regulation of the diet, but it must not be forgotten that the putrefaction may occur not so much in the food particles in the intestine as in the serous fluid poured out from the intestinal walls, which is particularly liable to putrefy easily. Dieting would not affect this; astringents should be given the preference, but the main reliance should be on copious injections, washing out from the bowel the putrefying substances. Diastatic ferments may be useful with fermentation dyspepsia and insufficiency of ferment production. Ordinary sour milk is useful also, but yoghurt is more effectual as the lactic acid bacilli in the latter are more resistant and produce more of the lactic acid. In conclusion he remarks that sourkraut may owe its reputation for wholesomeness to the lactic acid carried with it into the lower bowel; possibly a regular course of sourkraut might be useful in some cases.

110. **Abderhalden's Serodiagnosis in Internal Medicine.**—Bauer reviews the literature on this subject to date, all the evidence tending to confirm the existence of specific ferments, digesting certain organ tissues. At the same time it must not be forgotten that in most cases the ferments are not absolutely specific but tend to be polyvalent. A kind of codigestion (*Mitabbau*) may occur like the coagglutination in serology. It is only a question of time, however, when the technic will be perfected to avoid these group reactions. At present we are only at the beginning of the harvest to be reaped from Abderhalden's method.

112. **Covered Perforation of the Stomach.**—Schnitzler reports two cases recently observed in which the syndrome indicated perforation of a gastric ulcer but then the symptoms subsided and there was recovery in the clinical sense although roentgenoscopy revealed the presence of an unmistable boring ulcer. He warns that operative treatment should never be deferred or omitted in these cases; the perforation is liable to cause serious trouble anew at any moment. Both his patients were young women and in the first case the opening had become plugged by the pancreas.

114. **Radial Paresis from Lead-Poisoning.**—Zondek reports a few typical cases to call attention to the difficulty in flexing the hand backward on the wrist, which he noticed in a few cases as the first sign of lead-poisoning. The grasp of the hand was abnormally weak, but otherwise the condition caused no disturbance. He gives illustrations, and remarks that this radial paresis may prove useful in differentiation.

Münchener medizinische Wochenschrift

November 4, LX, No. 44, pp. 2441-2496

117 *Pressure on the Brain with Certain Eye Affections. II. (Höhe des Hirndruckes bei einigen Augenkrankheiten.) L. Heine.
118 Influence of Altitude on the Blood. (Physiologische Wirkungen des Höhenklimas auf das Blut und ihre Deutung.) K. Bürker.
119 The Spirocheta Pallida in Syphilis of the Central Nervous System. M. Versé.
120 Physical and Biologic Laws of Radio-Activity. (Grundlagen der Strahlenwirkung radioaktiver Substanzen, bes. des Mesothoriums und der Ersatz derselben durch Röntgenstrahlen.) C. Müller.
121 *Abderhalden's Serodiagnosis in Mental Diseases. (Bedeutung des Abderhaldenschen Dialysierverfahrens für die psychiatrische Diagnostik.) B. Beyer.
122 Parasite of Exanthematous Typhus. (Ueber den Flecktyphuserreger.) M. Rabinowitsch.
123 *Diagnosis and Treatment of Non-Tuberculous Disease of the Apex. Litzner.
124 *Operative Treatment of Acute Pancreatitis. A. Hofmann.
125 Movements of Chest Walls during Respiration. (Bewegung des Brustkorbes bei der Atmung.) A. Keil.
126 *Moving Air in Treatment of Granulating Wounds. A. Heisler.
127 Connection of Nervous System with Motor Functioning of the Stomach. G. v. Bergmann.
128 *The Physician and the Tailor. (Die Hohe Schule für Aerzte und Kranke. IX.) M. Nassauer.

117. **The Pressure in the Cerebrospinal Fluid with Eye Disease.**—Heine called attention some time ago to the increase in the pressure of the cerebrospinal fluid as a sign of otherwise latent irritation of the meninges with certain affections of the eye, such as keratitis, herpes of the cornea, etc. He shows by a few examples that a scrap of iron in the eye, contusion or other injury or affection is liable to increase the pressure on the brain, the headache, vertigo and other signs of abnormal pressure keeping up for weeks in some cases. In others there may be no signs of abnormal pressure. His experience confirms the assumption that a psychic element plays a large part in the syndrome.

121. **Abderhalden's Serodiagnosis in Psychiatry.**—Beyer's findings in fourteen cases confirm the possibility of utilizing the specific reactions in differentiating between dementia praecox and other mental affections, and excluding simulation. In the six cases of dementia praecox, testicle or ovary and cortex tissue was digested at every test, while the response was constantly negative in the manic-depressive cases, in simple syphilis, etc.

123. **Non-Tuberculous Disease of the Apex.**—Litzner writes from the Rehburg sanatorium to describe a number of cases in which an apical process had simulated tuberculosis. He shows that a whole series of physiologic and pathologic changes may occur in the apex which have nothing to do with tuberculosis. With a process due to inhalation of dust, the percussion and auscultation findings and possibly coughing up of blood are not as a rule accompanied by fever, and the general health does not suffer so much as with tuberculosis. In one of the cases the influenza bacillus was found constantly in the sputum but never tubercle bacilli, and the tuberculin test was constantly negative. This patient had been under treatment for tuberculosis for nearly a year and during the year since she has had hemorrhage from the lungs, the seventh in the course of eight years, but she has never had fever nor night sweats; no sputum, but occasional cough. Recently there has been some expectoration but the bacteriologic findings are still the same as before: influenza bacilli and no tubercle bacilli. It is important to examine the sputum for fungi. With an infarct in the apex, the sudden onset of symptoms and the usual heart disease point to the correct differentiation; pleurisy may follow if the infarct reaches to the surface. In two cases the trouble was a tumor; there is dulness over a tumor while respiration does not seem to be totally arrested. Echinococcus disease may simulate a tuberculous process, but it can be differentiated by a puncture-fluid free from albumin but with large salt-content.

124. **Acute Pancreatitis.**—Hofmann reports the successful outcome in a case of acute pancreatitis in which he had intended to excise the necrotic portion of the pancreas, but desisted on account of uncontrollable hemorrhage after merely

cutting the gland across after separating the capsule over the anterior aspect of the pancreas. He adds that with acute pancreatitis there is a strip of tenderness running across the abdomen, the pain on pressure being equally acute all along this strip corresponding to the outline of the pancreas, from the epigastrium to the spleen, along the left costal arch.

126. **Hot-Air or Moving-Air in Treatment of Large Wounds.**—Heisler has no apparatus to apply the douche of hot-air which Bergeat extols as particularly useful in promoting the healing of extensive granulating surfaces. To secure a similar action on the wound, he has his patients expose the limb to the stream of air blown from an ordinary electric fan or other ventilator. The current of briskly moving air dries up the wound rapidly and healing proceeds with remarkable promptness. The moving air answers all the purposes apparently of a superheated air-douche; it proved particularly useful in hastening the healing of rebellious leg ulcers and discharging eczema.

128. **The Physician and the Tailor.**—In this ninth installment of what Nassauer calls "The High-School for Physicians and Patients," he describes a doctor's experience in collecting his bill for delivering a primipara of 40. Delivery had been difficult and tedious, and some lacerations required suturing which he attended to at once. The elderly tissues did not hold the sutures well, and he told the woman to come to him later to have a stitch taken. When his bill was rendered, the husband, a tailor, sent the money for only half the amount of the bill, with a line saying "You overrate your work and you overrate my means. I had to have my wife's laceration sutured by Dr. Elbogen and I deduct the amount of his bill. The workman must pay for any damage he does." The physician wasted no thought on the writer of the note, but he imagined he could hear Dr. Elbogen's words as he repaired the laceration: "A tear of this kind is liable to happen to any one, but I have been very fortunate and have never had any in my practice. Why did not the obstetrician finish his work? perhaps he did not happen to have the necessary instruments with him. But the tear is bad now, and must be attended to at once. Come to the office and we'll have it fixed up in no time." "Elbogen's words were balm to the tailor's sordid soul," Nassauer concludes, "and their two hearts beat as one."

Therapie der Gegenwart, Berlin

November, LIV, No. 11, pp. 481-528

129 *Physical Measures in Treatment of Joint Disease. (Die physikalische Therapie der Gelenkkrankheiten.) P. Lazarus.
130 Experience with R[illegible] [illegible] Bergmann.
131 *Treatment of Tab[illegible] J. Donath.
132 *Pertussis and Its [illegible] Ochsenius.

129. **Physical Measures in Treatment of Joint Disease.**—Lazarus discusses the various physical measures that can be applied in treatment of acute and chronic arthritis, and describes the preferable technic. In chronic joint affections external treatment is generally more effectual than internal, contrary to what is observed with acute infectious polyarthritis. He says in conclusion that the results of physical measures often surpass those with drugs, and the general practitioner can apply them with simple procedures if only he will practice the proper technic. Physical measures have another important advantage in that they are applied by the physician himself, and thus more intimate relations develop between the physician and the patient than when he merely gives a prescription to be filled by a druggist. The physical measures should not be restricted to the hospitals and sanatoriums but every physician should master them, especially active and passive hyperemia, massage, massage of the hand in a mercury bath, ionization and radio-active applications.

131. **Medicinal Treatment of Tabes and General Paralysis.**—Donath remarks that the recently acquired knowledge that tabes and general paralysis are actual syphilitic processes points the way to treatment although irreparable lesions cannot retrogress. He applies the combination method, using salvarsan or neosalvarsan and sodium nucleinate or mercury as may be indicated. He warns that the symptoms at first may be and generally are aggravated by a kind of Herxheimer reaction, but if the patients are warned of this beforehand and told that the treatment will rouse up the disease, they bear with equanimity the aggravation and in a day or so the symptoms subside and great improvement becomes manifest. In a recent case a tabetic had suffered so long and intensely from gastric crises that an opening had been made into the intestine to permit him to be fed. As the crises still persisted, the Förster operation was contemplated. Donath was then consulted and he gave him neosalvarsan, about 2.55 gm. in four doses in the course of a month. After each infusion a severe gastric crisis followed for several hours but it then subsided, and as the patient could eat he gained rapidly in weight and strength and for nearly three months to date has had no further crises. Another patient with gummatous meningomyelitis, scarcely able to walk, had complete paraplegia develop the day after an intravenous injection of 0.3 gm. neosalvarsan. The paraplegia improved after a few days and by the end of the second week the dose could be repeated and the improvement has been progressive since; the patient can now walk normally. Donath warns that certain patients are unable to bear mercury, and this has to be dropped. He states that he has had no mishap in the more than 3,000 infusions he has made. The untoward by-effects reported in the early days of the salvarsan era were due to lack of care in regard to the smallness of the first doses, strict asepsis, mastery of the technic and exclusion from this treatment of persons with much degenerated important organs. He adds that electricity, hydrotherapy, massage and Frenkel's method of reeducating the muscles are seldom needed when the antisyphilis treatment can be vigorously applied, but they may prove useful when this is impossible.

132. **Whooping-Cough.**—Ochsenius was impressed with the fact that whooping-cough in its early stages presents merely the picture of infection of the upper air passages, pharyngitis with or without coryza. Aiming to prevent the spread of the infection downward, he paints the throat with a 2 per cent. solution of silver nitrate and in eighty-four of the ninety-five children to whom he has applied this measure in a thorough fashion, the effect was most excellent. The caustic action not only prevents secretion of mucus and thus wards off coughing spasms from irritation, but it has a most valuable effect on the child by suggestion. In the few cases in which this treatment seemed to fail, the children were all types of the exudative diathesis. He makes the application on alternate days, for infants every day at first, plus hydrogen dioxid. The result of the treatment was that by the end of the week the number of spasms was about the same but they were much less severe and there was much less secretion, and gradually the spasms became merely an ordinary cough.

Wiener klinische Wochenschrift, Vienna

October 30, XXVI, No. 44, pp. 1785-1832

133 Importance of a Constitutional Predisposition to Morbidity. (Bedeutung konstitutioneller Momente.) J. Bartel.
134 *Operative Treatment of Gastric Ulcer at a Distance from the Pylorus. A. Brenner.
135 Acidity of the Blood with Osteomalacia. J. Novak and O. Porges.
136 *Electric Accidents. (Bedeutung der Art und Intensität elektrischer Starkströme bei Einwirkung auf den Tierkörper.) S. Jellinek.
137 Freezing of Limbs in Military Campaigns. (Erfrierungen im Kriege.) v. Massari and G. Kronenfels.
138 Foreign Bodies in Air Passages; Two Cases. (Zur Fremdkörperextraktion aus den Luftwegen.) E. Paul.
139 Benzol in Leukemia; Two Cases. A. Krokiewicz.

134. **Gastro-Enterostomy or Resection for Gastric Ulcer.**—Brenner states that among the 326 gastro-enterostomies done since 1896 in his service, 67 were for a gastric ulcer at some distance from the pylorus. Ten in this group died during or soon after the operation (pneumonia, 3; peritonitis, 2; and the others from heart or kidney disease and one from perforation of the ulcer a week after the operation). In the 50 cases followed to date, 64 per cent. are permanently cured. The proportion of permanently cured among 18 surviving resection and followed to date has been only 55 per cent. Simple gastro-enterostomy is thus seen to give encouraging

and durable results; on the other hand, resection does not protect against recurrence of the ulcer and against cancer, while the operation makes such demands on the vitality that the immediate mortality in the 25 cases was 28 per cent.

136. **Electric Accidents.**—Jellinek reviews former experimental research by others and some recent work in this line by himself, the conclusions all pointing to the amperage as directly responsible for the effect on respiration and circulation. The voltage and wattage are far subordinate factors in the outcome.

Zeitschrift für klinische Medizin, Berlin

LXXVIII, Nos. 3-4, pp. 205-369. Last indexed Sept. 13, p. 909

140 Oversaturated Solutions of Uric Acid in the Body. (Untersuchungen über die übersättigten Lösungen der Harnsäure und ihrer Salze.) R. Kohler.
141 Biologic Action of Thorium X. V. Salle and A. v. Domarus.
142 The Epinephrin Content of the Adrenals in Thorium X Intoxication. (Zur Frage des Adrenalingehalts der Nebennieren bei Thorium X-Intoxikationen.) V. Salle and E. Apolant.
143 The Blood-Pressure after Injections of Thorium X; Experimental Research. (Blutdruck nach Thorium X-Injektionen.) W. Sudhoff and E. Wild.
144 Disappearance of Uric Acid from the Blood in the Gouty after Treatment with Radio-Active Substances. F. Gudzent.
145 The Share of the Nervous System in the Regulation of the Body Temperature. (Die nervöse Regulierung der Körpertemperatur; Rolle der Nebenniere.) A. Döblin and P. Fleischmann.
146 The Fat-Splitting Ferments in the Blood-Serum. (Fettspaltende Fermente im menschlichen Blutserum, ihre Abhängigkeit von krankhaften, namentlich kachektischen Zuständen, ihre Unabhängigkeit von der histologischen Zusammensetzung des Blutes.) L. Caro.
147 Diabetes Insipidus. C. Socin.
148 *Lessons Learned from Roentgen Examination of 1,200 Stomachs. (Klinische Erfahrungen über die Leistungen, die Grenzen und die Fehlerquellen bei der Röntgendiagnose der geschwürigen und krebsigen Veränderungen des Magens.) L. Schüller.
149 Progressive Dystrophy of the Muscles; Death from Paralysis of the Diaphragm. C. Braunwarth.

148. **Roentgen Examination of the Stomach.**—Schüller writes from the hospital at Düsseldorf that Roentgen examination of the stomach in 1,200 cases has confirmed the great value of this means of investigation in malignant disease, but that it is of little use for diagnosis of gastric ulcer. It shows up an indurated, perforated ulcer, but this type is rare; it also shows the sequels of an ulcer, but to date, he declares, the Roentgen rays have not helped at all in the diagnosis of a recent ulcer and in the overwhelming majority of cases of chronic ulcer. With cancer, however, it instructively supplements the clinical examination and the history of the case. In all his experience the Roentgen findings were never normal in a case with a history of stomach trouble for some time and actual cancer. On the other hand, the trouble never proved to be cancer when with the history of stomach trouble for some time roentgenoscopy showed apparently normal conditions in the stomach. Absolute certainty can be expected only with positive findings, as an incipient cancer may give no sign of its presence. He lays the principal stress on roentgenoscopy, showing the peristalsis and movability of the stomach, viewing it from different points. Roentgenograms are far less instructive. He adds that beginning cancerous degeneration of an old ulcer seldom shows conclusively on Roentgen examination. With this exception, normal findings enable malignant disease to be excluded and the patient reassured. When the ordinary means of investigation are supplemented by roentgenoscopy, we get as complete and accurate an estimate of conditions in the stomach as was attainable formerly only by an exploratory laparotomy. The various points liable to prove misleading are discussed in detail with about a hundred small skiagrams to illustrate the various instructive types encountered in bismuth work.

Zentralblatt für Chirurgie, Leipsic

November 8, XL, No. 45, pp. 1737-1768

150 *Differential Pressure Maintained Through the Nose for General Anesthesia. (Nasale Ueberdrucknarkose.) J. H. Zaaijer.
151 *Liquid Paraffin in Treatment of Wounds; 920 Cases. (Ueber ein erfolgreiches einfaches, im Balkankrieg erprobtes Wundbehandlungsmittel.) J. G. Chrysospathes.
152 Operation for Congenital Diverticulum in the Bladder. Kreuter.

150. **Differential Pressure by Way of the Nose.**—Zaaijer reports from Korteweg's surgical clinic at Leyden a remarkably simple and effectual technic for maintaining positive pressure in the lungs during operations on the esophagus. The large apparatus for differential pressure are complicated and expensive, and the Meltzer-Auer technic for intracheal insufflation is sometimes difficult to realize. He has experimented only on dogs, but he found his method so practical and effectual that he thinks it is applicable for the clinic. A rubber tube was introduced for a few centimeters in each nostril, the size of the tube such that it fits firmly in place. It is easily introduced over a catheter. By connecting these tubes with the oxygen tank and introducing a water safety-valve between the tank and the nostril, the lungs can be kept pumped full of air even with the chest open; the animal continues to breathe tranquilly. Even when the mouth is open, the breathing proceeds tranquilly, only a little more oxygen is required. He thus kept the animal for five minutes in tranquil general anesthesia with free access of air to each side of the chest, with his mouth open and with a catheter introduced into the esophagus. He found in tests on himself and on an anesthetized patient that respiration proceeded practically normally with open mouth. He did not force the positive pressure above 6 cm. water. The pharynx closes up, the intrapharyngeal pressure forcing the soft palate downward and the epiglottis forward. Only intermittently was it possible for air to escape through some narrow slit. He adds that the oxygen-chloroform mixture may be passed through warm water as with the Meltzer technic.

151. **Liquid Paraffin as Dressing for Wounds.**—Chrysospathes found paraffin oil an effectual dressing for sores of all kinds, and reports here that he applied it in treatment of wounds in the Balkan War in 920 cases and the wound healed over in a remarkably short time with a few rare exceptions. Even gaping wounds with exposed bones began to heal at once. The results were even better when he added about 2 per cent. iodoform with particularly severe suppuration. If the gauze sticks, it can be detached by pouring a little more of the oil on it or hydrogen dioxid. He expatiates on the advantages of this simple method of treatment, which does away with all salve and time-stealing procedures. In some of his cases the temperature dropped to normal each time after application of the paraffin, but rose again when the oil was suspended. He has been using this method for some years, having found it so effectual for sterilizing catheters and healing bed-sores.

Zentralblatt für Gynäkologie, Leipsic

November 8, XXXVII, No. 45, pp. 1645-1676

153 *Retrogression of Bladder Changes under Radiotherapy of Cancer of Uterine Cervix. (Rückbildung der Blasenveränderungen bei bestrahlten Collumkarzinomen.) W. Sigwart.
154 *Extraperitoneal Cesarean Section and Pubiotomy. (Extraperitonealer Kaiserschnitt und Beckenspaltung.) W. Weibel.

153. **Radiotherapy of Cancer of the Uterine Cervix.**—Sigwart gives some cystoscope views of the interior of the bladder taken before and after Roentgen treatment of a cancer in the uterine cervix. They show the remarkable retrogression of the bladder changes as the uterine growth subsided under the Roentgen treatment.

154. **Extraperitoneal Cesarean Section and Pubiotomy.**—Weibel states that extraperitoneal cesarean section has been applied in sixty-seven cases during the last five years at Wertheim's clinic at Vienna; during this period pubiotomy has been done thirty-nine times and symphyseotomy not once. In the sixty-seven extraperitoneal cesarean sections, all but two of the children were delivered alive; in one case the mother had become very much asphyxiated during the operation and in the other case the fetal heart sound had grown abnormally weak before any intervention. The mortality in the sixty-seven cases was 3 per cent. and none in the last series of fifty-two women succumbed. One of the thirty-nine women requiring pubiotomy died from thrombophlebitis, twenty-five days after the operation. He thinks that the mortality of 8 per cent. among the children for both opera-

tions is encouragingly low. The 3 per cent. mortality among the mothers occurred while the method was still in its tentative stage.

Zentralblatt für innere Medizin, Leipsic

November 8, XXXIV, No. 45, pp. 1121-1144

155 *Atrophy of Intestinal Mucosa with Pernicious Anemia. R. v. Lippmann.
156 Quantitative Determination of Indican in the Urine. (Harn-Indikanbestimmung.) D. Natonek.

155. **Atrophy of the Intestinal Mucosa in Pernicious Anemia.**—Lippmann has been investigating the normal relations between the apparent and the real functional capacity of the stomach. He describes the method by which he determined the comparative weight of the musculature and the stomach and the intestine. In a typical case of pernicious anemia he found that the proportion between the mucosa and the musculature in the small intestine was as 100 to 198; for the large intestine as 100 and 403. These findings exclude the assumption that atrophy of the mucosa is a constant accompaniment of pernicious anemia.

Gazzetta degli Ospedali e delle Cliniche, Milan

November 2, XXXIV, No. 131, pp. 1367-1382

157 Plastic Induration of the Penis. F. Cinquemani.

Policlinico, Rome

October 26, XX, No. 43, pp. 1545-1584

158 *Scorbutus in Children. M. Spolverini.
159 Phlegmasia Alba as Complication of Pneumonia. L. Castriota.

November 2, No. 44, pp. 1585-1620

160 Myeloid Leukemia with Eye Symptoms. (Caso di leucemia mielogena con una particolare manifestazione oculare.) L. Casolino.
161 Epidemic of Undulant (Malta) Fever in Italy. O. Golini.

158. **Infantile Scorbutus.**—Spolverini reports three cases to show the difficulty of differentiating the true cause for the disturbances in the incomplete forms of scorbutus in infants. There was no swelling of the gums or thickening of the shafts of the long bones in his cases to suggest Barlow's disease; the children merely grew paler and restless, whining and pleading to be taken up and carried, tiring easily, sweating freely, particularly in the head and face. There was nothing characteristic about the symptoms, but the weakness and anemia persisted uninfluenced by ordinary means. There was no spontaneous pain, but the children kept very quiet, with the legs drawn up, to avoid the pain from movements. One of the children was about 2 years, the others 10 or 19 months old. The differentiation in such cases from hip-joint or spinal disease, acute rachitis, neuritis, etc., is by exclusion and by the prompt benefit from change of diet.

Riforma Medica, Naples

October 25, XXIX, No. 43, pp. 1177-1204

162 *Amputation of the Breast. (Sul mio processo di amputazione della mammella per cancro.) I. Tansini.
163 Dilute Acetic Acid Test to Differentiate Effusions and Transudates. M. Barberio.
164 Differential Test-Tube Reactions of Elements of the Blood. (L'azione, in vitro, sul biossido di carbonio, dei polinucleati e dei linfociti, confrontata con quella dell' emoglobina.) M. Ciovini.
165 *Significance of Azurophil Granules in Lymphoid Cells in Infectious Diseases. E. Mondolfo. Commenced in No. 42.
166 *Benzol in Leukemia. C. Quadrone and C. U. Buzzano. Commenced in No. 42..
167 *Stain for Tubercle Bacilli. (Metodo rapidissimo per la colorazione del bacillo tubercolare.) N. Mori.

162. **Amputation of the Breast.**—Tansini's technic for radical removal of cancer of the breast was described in The Journal, March 23, 1912, p. 899. He thinks it should be given the preference whenever a radical operation is possible as it does away with the possibility of recurrence in the skin, which his experience previously has shown to be a most common type of recurrence. A few months or years after the operation with other technics, a cancer lump appears in the skin, while recurrence in muscle or lymph-node is much less frequent, at least in Italy, he says. Others besides himself have commented on this. Other surgeons regard the skin as of less importance than muscle and lymph-nodes when it is a question of recurrence and they are liable to pay dearly for this confidence in the skin. After Tansini has extensively removed the skin he covers the vast defect left by twisting a large flap around from the back, the farthest possible from the skin near the site of the cancer. His method is thus not essentially a plastic operation, but he has to do an extensive plastic operation to conclude his thorough removal of the cancer and tissues liable to recurrence. His method has the incidental advantage that it does away with the linear scar in the axilla which is liable to shrivel and interfere with the use of the arm.

165. **Azurophil Lymphocytes in Infectious Diseases.**—Mondolfo found granulations taking azure stain in the lymphatic cells in all the infectious diseases studied but not with any degree of constancy or intensity of staining. On the other hand, they proved invariably constant and strongly azurophil in measles—possibly a fact of diagnostic importance.

166. **Benzol in Leukemia.**—In the four cases of leukemia reported, little if any benefit was realized from the benzol.

167. **Improved Stain for Tubercle Bacilli.**—Mori regards the technic he describes as the best yet proposed, not only for its rapid action and reliability, but for the beauty of the results. It is a modification of Ziehl's first method, differing by the formula of the fuchsin stain, and by the fact that all can be used cold, and that no sediment develops on standing. The carbol-fuchsin solution is made with 0.5 gm. fuchsin, 10 c.c. absolute alcohol, 2.5 gm. phenol and 100 c.c. distilled water. The fuchsin is dissolved in the alcohol, the phenol is then added, and then the water is stirred in a little at a time, and the mixture is then set aside for twenty-four hours and then filtered. Differentiation is done with a 1 per cent. solution of sulphuric acid, and the contrast staining with a 1 to 4,000 solution of methylene blue. Each fluid is applied in turn for ten or fifteen minutes, washing in water between.

Meditsinskoe Obozrienie, Moscow

LXXX, No. 12, pp. 4-106

168 Effect of Mother's Illness on Health of Nursing Infant. (Kormlenie bolnimi materiami grudiu svoik dietie.) T. A. Zaetseff.
169 Stenosis of Pylorus in Children; Case of Pylorospasm in Eight-Months' Infant and in Girl of Twelve. P. V. Kuskoff.
170 Interpretation of Palpation Findings at the Appendix. (Palpatsie cherveobraznago otrostka.) M. M. Riezanoff.
171 Sixth Edition of Russian Pharmacopeia. S. I. Chirvinski.
172 Pharmacologic Study of Epinephrin. (Hypernephrinum.) V. A. Smirnoff.

Hospitalstidende, Copenhagen

November 5, LVI, No. 45, pp. 1325-1348

173 *Tuberous Sclerosis of the Brain. (Den tuberøse Hjernesklerose.) O. Keller and H. Scharling. Commenced in No. 44.

173. **Tuberous Sclerosis of the Brain.**—Keller and Scharling report nine cases of this affection with necropsy in four; the other patients are still living. All are idiots and all but two are epileptic and all but two have the characteristic adenoma sebaceum which usually seems to be associated with this congenital disease. Necropsy revealed other tumors in internal organs in some. There was no history of inherited taint except possibly in two cases. Two were not epileptics; only one case is on record with the typical affection not accompanied by epilepsy. It commenced before the child was a year old in all these cases. In the twenty-five cases they have found on record with necropsy, including their own four, a neuropathic predisposition was evident in only 48 per cent.: epilepsy in 88 per cent.; adenoma sebaceum in 64 per cent.; tumors in the kidneys in 76.3 per cent. and in the lateral ventricles in 45 per cent., and tuberous sclerosis in the brain in 100 per cent.

Nordiskt medicinískt Arkiv, Stockholm

XLVI, Internal Medicine, No. 1. Last indexed Sept. 13, p. 910

174 Shape of the Anterior Surface of the Crystalline Lens. (Form der Linsenfläche im menschlichen Auge.) J. W. Nordenson.
175 Formation of Uric Acid. (Bildung der Harnsäure beim Menschen.) J. P. Chrom.
176 Chemical-Bacteriologic Study of the Air in the Moving-Picture Shows at Stockholm. (Luftundersökningar à Stockholms biografer.) E. Levin.

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TREATMENT OF PNEUMONIA WITH PARTIALLY AUTOLYZED PNEUMOCOCCI *

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Rosenow has shown that when virulent pneumococci are suspended in physiologic salt solution the substance or substances on which their resistance to phagocytosis and virulence depend pass into solution.[1] The soluble part or "virulin" at a certain stage of autolysis is highly toxic and has little immunizing action, while the insoluble remnants have well-marked antigenic properties and practically no toxic effects. The soluble toxic part has been found to interfere with the formation of antibodies following injections of the non-toxic insoluble remnants. The protective value against experimental pneumococcus infections of detoxicated pneumococci has been found to be greater than that of heat-killed pneumococci.[2] For these reasons it seemed advisable to determine, if possible, whether or not the injection of virulent pneumococci, from which the readily soluble and toxic parts have been removed, would have any influence on the course and death-rate of lobar pneumonia.

PREPARATION OF ANTIGENS

The antigens or vaccines used during the winter of 1911, eight in all, were prepared from twenty-four-hour cultures of highly virulent pneumococci grown chiefly in ascites-dextrose broth. The broth was prepared from meat infusion, rendered sugar free, and then 0.2 per cent. dextrose was added and ascites fluid in the proportion of one part in ten. After centrifugation the pneumococci were suspended in 0.5 per cent. phenol in sodium chlorid solution and placed at 37 C. (98.6 F.) for twenty-four hours. This was repeated once or twice, until practically all the organisms had become Gram-negative and eosinophilous. Three of the antigens were prepared in the same way from the washed pneumococci which had grown in the peritoneal cavity of guinea-pigs. The antigens used during 1912 and 1913 were prepared from a large number of strains of highly virulent pneumococci which had grown both in the peritoneal cavity of guinea-pigs and in ascites-dextrose broth. The growth equivalent to that of approximately 150 c.c. of broth was suspended in 30 c.c. sodium chlorid solution at 37 C. under ether. In the case of the antigen used in 1912 the cocci were removed by centrifugation at the end of forty-eight hours and resuspended in sodium chlorid solution under ether. This was repeated twice. The disintegration was then marked and all the cocci had become Gram-negative. The antigen used during the winter of 1913 was prepared by suspending the pneumococci in sodium chlorid solution under ether at 37 C. until 7 c.c. of the suspension were no longer toxic for guinea-pigs when injected intravenously; that is, for about seventy-two hours. The organisms at this time had nearly all become Gram-negative. The sterility of the final product was determined by making both aerobic and anaerobic cultures on blood-agar. Some care must be exercised not to carry the process too far, because then all antigenic powers may be lost; experiments indicate that the best time to interrupt the lysis is when almost all the cocci have lost their affinity for the Gram stain. Standardized suspensions are used from the beginning of the extraction, and the final suspension represents about 20 billion pneumococci per cubic centimeter. This is kept in the ice-chest.

The dose used during the winter of 1911 varied from 10 to 20 billion. The injections were given subcutaneously daily until the temperature reached normal. During the second period, 1912, only one injection of approximately 20 billion was given as soon as the diagnosis was established, while during the past winter from 10 to 15 billion were given daily until the temperature reached normal. Only slight tenderness follows the injection and there is little local and no general reaction noticeable.

THE TREATMENT OF CASES

The cases treated may be considered in three classes: the cases treated outside of the hospital, the uncontrolled cases in the hospital and those controlled by alternate untreated cases.

The results in the thirty cases occurring in the practice of physicians outside of the hospital were better than those obtained in the more unfavorable cases in the hospital. Of the 30 patients, three died. One of these showed a large number of influenza bacilli in the sputum, together with pneumococci and streptococci; the second patient had a high grade of emphysema, due to a bronchial asthma of long standing, and the third death occurred in an alcoholic aged 58 who had a chronic myocarditis. Injections were begun in the fatal cases on the fifth, second and fifth day, respectively; in the patients who recovered, on the first or second day in seven, on the third day in eight, on the fourth day in five and on the fifth, sixth and seventh days in six; while in four cases the exact time of onset could not be ascertained. The ages ranged from 19 to 58 years. The results as determined by observation at the bedside when the treatment was begun within forty-eight hours of the onset often seemed striking: there was usually a rise of about a degree in temperature in a few hours, then the temperature would usually drop markedly, to remain one or two degrees lower the following day, and if now the injection was repeated, a normal temperature was often reached in three, four or five days after the onset. When the injections were given in three or four days after the onset the beneficial effect was less evident, while if begun still later there was no apparent improvement. Harmful effects have not been observed in any of the cases.

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* From the Memorial Institute for Infectious Diseases, Chicago.

[1] Rosenow, E. C.: Human Pneumococcal Opsonin and Antiopsonic Substance in Virulent Pneumococci, Jour. Infect. Dis., 1907, iv, 285; abstr., The Journal A. M. A., July 6, 1907, p. 87. Tchistovitch and Yourevitch (Ann. de l'Inst. Pasteur, 1908, xxii, 611) made the same discovery.

[2] See preliminary note by Rosenow, E. C.: Autolysis of Pneumococci and the Effect of the Injection of Autolyzed Pneumococci, The Journal A. M. A., June 11, 1910, p. 1943; Immunization in
, Sept. 7, 1912, p. 705; Mechanism of Intox-
Anaphylaxis and in Pneumococcus Infec-
nat. Cong. Hyg. and Demog., 1912, ii, 338.

The second group, consisting of thirty-five cases, occurred in the Cook County Hospital during November and December, 1910. They were treated in the same manner as the cases just mentioned. Nine of these patients died, a death-rate of 25.7 per cent. The injections in the fatal cases were begun on the second day in only one case, on the third day in two, and in the remaining on the fourth, fifth and sixth days. One of these cases was found to be streptococcus pneumonia, in the other pneumonia developed during puerperal sepsis, and one patient had delirium tremens. Three others were bad alcoholics. The treatment in the cases with recovery was begun on the second day in two, on the third in three, on the fourth in three, and on the fifth, sixth, seventh and eighth days in the rest. The ages in this group ranged between 18 and 70 years.

We come now to the consideration of the third and largest group. The good effect of the early injections often seemed convincing, but because pneumonia is so variable in its course some sort of control is desirable. In order to do this most effectively we used the statistical method. Every second pneumonia patient in the order admitted to the Cook County Hospital of Chicago during January, February and March of 1911, 1912 and 1913, the height of each pneumonia season, was injected subcutaneously with detoxicated pneumococci at the same time as he received the usual routine treatment given to all patients with pneumonia, which was not modified in any way whatsoever. There was no selection practiced at all—every second pneumonia patient was injected, the uninjected serving as the control group. We are deeply indebted to the physicians of the hospital for their willing cooperation and encouragement. Altogether there are 294 cases for consideration in this group, 146 receiving the injections and 148 constituting the controls. Of the control group fifty-six died, a death-rate of 37.8 per cent. Of the injected group thirty-four died, a death-rate of 23.3 per cent., a total lowering of the death-rate of 14.5 per cent. in the injected group.

TABLE 1.—DEATH-RATE IN THE TREATED AND UNTREATED PNEUMONIA CASES BY YEARS

Year	Treated			Untreated		
	Total No.	No. Died	Death-Rate	Total No.	No. Died	Death-Rate
1911	51	16	31%	50	25	50%
1912	46	11	24%	48	15	31.2%
1913	49	7	14.3%	50	16	32%

Table 1 shows that the mortality-rate was lower in the injected than in the uninjected or control cases during each of the three pneumonia seasons. The unfavorable class of cases that we are dealing with is well illustrated by the very high death-rate of the control cases. It should be said at this time that the death-rate from pneumonia in Cook County Hospital is always very high because most of the pneumonia patients are of the least favorably situated class hygienically and economically, of the whole adult male population of Chicago, many of them using alcohol excessively.

In Table 2 the death-rate is given by decennial periods. It shows a consistently lower death-rate in the injected cases than in the uninjected cases in each period except between the ages of 61 and 70 years. Here the mortality is slightly higher in the treated cases; but only four were treated with two deaths, whereas in the controls there were eleven cases with five deaths.

TABLE 2.—ANALYSIS OF THE RESULTS BY AGE-PERIODS

Decennial Periods	Treated			Untreated		
	Total No.	No. Died	Death-Rate	Total No.	No. Died	Death-Rate
1-20	21	0	0 %	17	2	11.4 %
21-30	39	7	18 %	36	8	22.2 %
31-40	43	11	25.5%	34	14	41.1 %
41-50	25	8	32 %	32	14	43.7 %
51-60	14	6	42.8%	18	13	72 %
61-70	4	2	50 %	11	5	45.45%
	146	34	23.3%	148	56	37.8 %

The incidence of complications and sequelae seems about the same in both groups, and the attack terminated by crisis of those that recovered in 71 per cent. of the injected and in 65 per cent. of the uninjected group. There is a tendency to earlier crisis in the injected group, especially in the cases in which there was a chance to begin the injections early. Thus during 1911 and 1913 when this point was studied, the injections were begun on the first or second day in all but two of the twenty-one cases in which crisis occurred on the sixth day or earlier.

Further analysis of the cases shows that the average age of the injected patients is 34 years while that for the uninjected patients is 36 years. The average age of the injected patients who died is 42.3 years, that of the uninjected patients who died is 42.9.

According to the facts obtained there were seventy-two bad alcoholics in the uninjected group and of these twenty died; there were seventy-three bad alcoholics in the injected group and of these twenty-six died.

The average duration of illness before entrance to the hospital in the control group is 4.3 days; of the control fatal cases 4.4 days; of the injected cases 3.9 days, and of the injected fatal cases 4.3 days. The first injection in nearly all cases was given the day after admission. This makes the average time of the first injection about the fifth day of the disease—necessarily a disadvantage in any form of treatment of pneumonia and particularly for the one under consideration.

CONCLUSIONS

In view of the fact that the mortality is consistently lower in the injected cases each year, that the average time of the first injection was late (approximately the fifth day), and that the type of cases treated is of the worst kind, nearly one-half of the patients being bad alcoholics, the conclusion that this method of treatment of pneumonia is of value seems warranted.

The results obtained in the series outside of the hospital, in which the injections were begun earlier, indicate that by the early administration of the antigen better results can be secured. Further observations require the cooperation of physicians who are in position to give the injections at the earliest moment.[3]

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[3] The antigen or vaccine is kept on hand and it will be sent free on application to physicians who are willing to send us records of the cases.

ENTERICOID FEVER—FEBRIS ENTERICOIDES *

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During the last few years I have seen a number of cases of continued fever that resembled typhoid fever but did not give the usual laboratory tests nor did they present all of the characteristic clinical features of that disease. In their symptomatology they did not, however, depart from the text-book description more than many well authenticated cases of typhoid fever. I am sure that every physician in active practice sees cases of fever that impress him in the beginning as typhoid, and if he commits himself to this diagnosis he is often much embarrassed to find that the duration is too short for it to be typhoid fever or that the case does not give the laboratory reactions of that disease. I am, of course, not referring to certain widely different infections that may assume a typhoid type, such as ulcerative endocarditis, miliary and caseous tuberculosis, meningitis, etc.

One of these typhoid-like infections has already been established as a clinical entity, namely paratyphoid fever. But it has seemed to me from observation and a perusal of some recent literature that in addition to paratyphoid fever there are other febrile affections that at present are either included under the head of typhoid fever or are as yet "without a local habitation and a name." The recognition of paratyphoid fever has come as a welcome escape from a perplexing dilemma, for it helps to explain a number of otherwise puzzling facts. It explains the occurrence of second attacks of typhoid fever. Most of the literature on this subject antedates the discovery of the paratyphoid bacillus. Inasmuch as typhoid fever does not protect against paratyphoid fever, a person may have the two diseases at different times. The observer not familiar with the facts and not making the differential clinical tests takes it for granted that the two attacks are both typhoid fever. I would, of course, not deny the possibility of typhoid recurrence, but I believe that the newer studies will show its great infrequency. Another disturbing factor for which we now have a fairly satisfactory explanation is the observation that a goodly proportion of persons vaccinated against typhoid fever later developed a typhoid-like infection. Without careful laboratory study the inference would have been drawn that vaccination against typhoid was not as completely protective as its advocates had claimed. But when it is found that the disease attacking the vaccinated persons is not typhoid but paratyphoid fever, then our confidence in vaccination returns, though it is chastened by the thought that its protection is too specific and too limited. Hence we must approve the suggestion of Colonel Firth[1] that vaccination in the future should be done both against typhoid and against paratyphoid fever. I may add, however, that I have seen two cases in which, despite antityphoid vaccination made *secundum artem*, a febrile disease developed three months later which by the ordinary clinical and laboratory tests seemed to be true typhoid. One of the cases[2] ended fatally and at necropsy typhoid ulcers were found.

Through an unusual coincidence I had under observation during the past summer (1912) four cases of continued fever that, while resembling typhoid fever most closely, could not with justice be so designated.

CASE 1.—S. M., a married woman, aged 40, a native of England, residence Telford, Pa., was admitted to the Jewish Hospital on Aug. 17, 1912, complaining of headache from which she had been suffering for three weeks. In the beginning she had had chills for two days and a little nausea. Twelve years before she had had an attack of typhoid fever and had been treated for it in a hospital in Philadelphia. Up to three weeks before admission she had been obtaining her drinking-water from a well on the farm, but changed then to town water because the well-water was beginning to have an offensive odor. Her temperature was somewhat irregular, ranging between 99 and 102 F. with occasional drops to below normal. The fever persisted from her admission on August 17 until September 16, exactly thirty days, and as she had been ill two weeks prior to admission her disease lasted altogether six weeks. Throughout her stay in the hospital the patient made no complaint. She had no diarrhea, no delirium, no rose spots, or palpable spleen. The Widal and diazo reactions were negative. The leukocytes were 5,400; the red cells 4,320,000; the hemoglobin 75 per cent. Recovery was complete.

CASE 2.—G. H., a lawyer, single, aged 41, brother of a physician, entered the Jewish Hospital Sept. 5, 1912, having been ill a week. Nine years previously he had had an attack of typhoid fever lasting three months. Physical examination was entirely negative. There was no enlargement of the spleen, no roseola. The leukocytes numbered 7,400. The Widal test and blood-culture gave negative results. The temperature remained elevated for ten days after admission, reaching 102 F. as its highest. Decline was by lysis.

CASE 3.—M. R., a single woman, aged 57, a seamstress by occupation, was admitted to the Jewish Hospital on Sept. 7, 1912, with a history of having been ill five weeks with fever, diarrhea and occasional vomiting. In July, 1911, she had, according to her statement, an attack of typhoid fever. The house in which she had lived had very bad drainage. Physical examination showed a few doubtful rose spots; the spleen was not demonstrably enlarged; at both pulmonary bases fine crackling râles could be heard. A curious feature was the presence of a pulse of the water-hammer type without any manifest aortic insufficiency. The temperature oscillated considerably, rarely sinking to normal and reaching as its highest point 104 F. It declined gradually and became normal on September 20, exactly two weeks after admission. If these two weeks are added to the five she was ill before coming to the hospital, there is a total duration of seven weeks. The blood showed 5,400 leukocytes. The Widal reaction was negative on September 9 and positive on September 29. The blood-culture was negative and a culture of the feces showed the colon bacillus and a staphylococcus. A culture of the urine was made but unfortunately became contaminated.

CASE 4.—M. J., aged 23, is the wife of a surgeon in the United State Navy. Her medical history is interesting. Wherever she has lived, and she has lived in many places, she seems to have fallen a victim to the indigenous disease. At the age of 8, while residing at Fort Myer, she had an attack of dysentery, another while in Cuba, and a third while in the Philippine Islands. In the last place she also had two attacks of dengue. In January of this year (1912) she received a series of three injections of typhoid vaccine.[3] In July she had an operation for dilatation and curettement. She was taken ill on August 1 with general malaise and headache. On August 8 she got a thorough wetting which was followed by headache and severe pains throughout the body. She entered the university hospital on August 15, with a temperature of 104 F. When I saw her for the first time, she was bright and alert, but preferred to keep her eyes covered with a folded handkerchief. Her face was flushed and around the eyes there was a bright ring of erythema. Heart and lungs presented nothing abnormal. The spleen was not palpable. Over the legs there were numerous crusts, the remains of an eruption of dermatitis herpetiformis, from attacks of which the patient had suffered for many years. There was considerable cough with scanty expectoration, in which some micro-organisms in chains and short encapsulated Gram-negative and also Gram-positive diplococci were found. Tubercle bacilli were not present. The leukocytes were 7,700, with a normal differential count. The urine gave doubtful diazo reaction. The Widal test was negative in the beginning, doubtful on August 19, negative on August 29 and on September 2. On September 2 the patient had two chills a half-hour apart without sweats, headache or nausea. The next day the leukocytes were 16,600. Blood-culture gave negative results and two examinations of the stools for typhoid bacilli were likewise negative, only the *Bacillus pyocyaneus* and the colon bacillus being found. All tests for the paratyphoid organism were also negative. Eighteen days after admission, or nearly five weeks after the beginning of the illness, a few rose-colored spots appeared on the abdomen. The temperature throughout was somewhat irregular—from 101 to 104 F. during the first week, afterward between 99 and 101 F., then again between 101 and 104 F. It reached normal September 14, exactly thirty days after the patient's entrance into the hospital.

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* Read before the Section in Medicine of the College of Physicians of Philadelphia, Oct. 28, 1912.

[1] Firth: Jour. Roy. Army Med. Corps, 1912, No. 19, p. 157.

[2] Since the foregoing was written the organism isolated from the fatal case has been carefully studied by Dr. K. F. Meyer, of the State Livestock Sanitary Board, with the most interesting result that, though belonging to the typhoid group, it proved to be neither the ordinary typhoid nor the paratyphoid bacillus.

[3] According to Colonel Firth, Major Russell, Spooner, and others, the antityphoid vaccination protects for at least thirty months.

REMARKS

I think I can say quite definitely that the disease in these four patients was not typhoid fever, although for want of a better name it was so entered in the hospital records. As to the possibility of its having been paratyphoid fever, there is no clear evidence either one way or the other in the first three, while in the fourth all the known tests for paratyphoid fever proved negative. The etiology thus remains obscure; and so it will remain in many other cases of like nature until we have more accurate diagnostic tests. Progress will be made in this confused field as soon as the fact is recognized that there are organisms allied to the typhoid bacillus that are capable of producing typhoid-like febrile diseases. By means of cultural and serologic tests it is now comparatively easy to separate from typhoid fever a disease formerly confounded with it called paratyphoid fever, but further refinement of our biologic methods will, I am sure, reveal still other types of infection. Even now it is possible to separate paratyphoid fever into two subvarieties, one due to the paratyphoid bacillus A, an organism closely allied to the true typhoid bacillus, and one due to the so-called paratyphoid bacillus B.[4]

The typhoid bacillus is almost exclusively a human parasite. This is also true of the *Bacillus paratyphosus* A. The paratyphoid bacillus B, on the other hand, has a wide distribution in the lower animals, especially in those serving for human food. While generally a harmless saprophyte, it may, like the human colon bacillus, become pathogenic under certain conditions, causing various forms of animal diseases. The meat of such animals may then in turn be harmful to man. I believe that this form of food infection is at the bottom of many obscure cases that at the present time either cannot be classified or are wrongly designated as typhoid fever.

Two principal types of organisms have been found as the cause of food poisoning—the Gärtner type (type of the *Bacillus enteritidis Gärtner*) and the paratyphoid B type. Both of these are represented in nature by many subspecies. They are found in the flesh of diseased animals, but some, especially the paratyphoid B group, also in animals that are apparently well. Moreover, the meat of healthy animals may in the slaughter-house or in the butcher-shop become contaminated through contact with parts of diseased animals. Among the meats used for food, veal seems to be the chief purveyor of infection, but many meat products, poultry—especially goose—fish, lobster, oysters, milk, eggs and cheese may carry the germs.[5]

Much interest attaches to the *Bacillus suipestifer*, a common pathogenic parasite of hogs. It is erroneously called the bacillus of hog cholera; the latter disease is due to an invisible virus with which the bacillus seems always to be closely associated. On account of its ubiquity, the *Bacillus suipestifer* is an important organism, though the exact rôle it plays in human pathology, if it plays any, is still unknown. Morphologically, it is indistinguishable from the paratyphoid bacillus.

Another interesting though little understood point in the epidemiology of this group of infections is the existence of typhoid-like organisms in animals not used for slaughter, such as mice, rats, parrots, canary birds, rabbits and guinea-pigs. Loeffler, in a very fatal epizootic among mice characterized by gastro-enteritis, isolated an organism, the *Bacillus typhi murium*, that is virtually identical with the paratyphoid organism. Nocard, in parrots dying of an epidemic enteritis, found the so-called psittacosis bacillus, which likewise has nearly all the characteristics of the paratyphoid bacillus B. Cases of transmission[6] of the psittacosis bacillus from parrots to human beings have been reported from France and Germany. Another organism not distinguishable from the paratyphoid bacillus was found by Mori in cats dying of acute enteritis. Since animal parasites may easily be conveyed from the lower animals to man, it is not surprising that bacterial infection from one to the other, even when the animals are not used for slaughter, also readily occurs. It is probable that infection is brought about more often through meat and other animal food products than through the medium of domestic pets and rodents. In obscure cases, however, all those possible sources should be taken into consideration.

The symptoms of infection naturally vary widely depending on the virulence of the organism and the susceptibility of the host. Some of the toxins of the paratyphoid group are exceedingly powerful, causing a prompt and violent toxic gastro-enteritis. As they are thermostabile the cooking process does not lessen their toxicity. Many cases of so-called ptomain poisoning and cholera morbus probably have such an origin.

Instead of causing a pronounced local inflammation, the organisms may bring about a general disease in which the local manifestations are but of slight moment. This is the typhoid type of the infection and the one that causes most of the diagnostic difficulties. The disease may last a short time or may be prolonged for weeks. Many and varied are the diagnoses made in protracted cases. Relapses are rarer in paratyphoid forms than in true typhoid fever.

I thought it would be convenient, even though it might not help to clarify the subject, if there were a term to designate all the diseases that resemble but are not true typhoid fever and that are due to micro-organisms of the large paratyphoid family. As the word "typhoid-oid," though expressive is not euphonious, I avail myself of the suggestion made by Dr. H. A. Hare in discussing this paper and propose the name "entericoid" fevers. Up to the present paratyphoid is the best known of the entericoid fevers. In time, as I have intimated, we shall learn to distinguish others—by agglutination and absorption tests,[7] by cultural methods, particularly culture on sugar mediums, and by animal inoculation.

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[4] For unknown reasons the majority of cases of paratyphoid in Germany seem to be due to the paratyphosus B, while in this country and in India the paratyphosus A plays the major rôle.

[5] It may not be amiss to say that sausage-poisoning is due to a wholly different cause, namely, to an anaerobic bacterium—the *Bacillus botulinus*. The symptoms produced by this organism resemble those of atropin-poisoning.

[6] Drewes reports an interesting case in which a woman who had bought a parrot fell ill of a typhoid-like affection. On investigation it was discovered that the saleswoman from whom she had purchased the parrot was a paratyphoid carrier.

The knowledge that there are many other modes of infection aside from those known to convey typhoid fever —that meat and meat products, poultry, eggs, cheese and other articles of food may transmit pathogenic species of the paratyphoid group, and that mice and rats, cats and birds may be carriers of similar organisms, should stimulate us to trace the source of infection in every enigmatic case.

CONCLUSIONS

1. The term "typhoid fever" as commonly used by physicians includes more than one variety of disease.
2. Only that in which the characteristic serologic and cultural tests for the typhoid bacillus are obtained should be called typhoid fever.
3. To the others, which clinically may resemble typhoid very closely, the term "entericoid fever" may be applied.
4. The entericoid fevers are due to different strains of organisms of the paratyphoid group and to others morphologically similar (Gärtner's *Bacillus enteritidis*, etc.).
5. The source of infection is chiefly food derived from unhealthy animals.
6. Food (including drink) may become contaminated through contact with diseased meat, through rodents, birds, or through the discharges of carriers, etc.
7. So-called second attacks of typhoid fever are probably entericoid (paratyphoid) fever, provided of course the first was genuine typhoid fever.
8. In all cases of typhoid-like character careful search should be made for the source of infection, and blood-cultures and other tests for the determination of the infecting agent.
9. By combined clinical and laboratory investigations it should eventually be possible to distinguish, according to their specific etiology, the various entericoid diseases now grouped together.

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[7] The absorption test was proposed by Castellani and is as follows: If it is intended to determine whether a given specimen of blood-serum contains agglutinins, for example, for the *Bacillus paratyphosus* B, the group agglutinins are first removed by mixing the serum with cultures of the typhoid bacillus, the *Bacillus paratyphosus* A, etc. Any agglutinins of these organisms will be absorbed, leaving that for paratyphosus B intact if it is present. It should be borne in mind that the paratyphoid produces very weak agglutinins, so that a negative Widal reaction for it has less value than in the case of typhoid fever.

Individual Health Depends on Community Health.—The health of the community depends on the health of the citizens, but the health of each individual also depends in some measure, often in large measure, on that of the other members of the community. Health of the individual is therefore a condition that, generally speaking, can be maintained only by a combination of individual and community effort, and its importance is such that in the activities of the city and of the state it should hold a prominent place. The health of the community should be of greater concern than commercial prosperity, for it is essential to commercial prosperity. Necessary as are our courts, our fire and police departments, and our educational systems, the importance of the community's attention to the citizen's health is second to none.—John W. Trask, *Pub. Health Rep.*

THE TREATMENT OF HEMOPTYSIS IN PULMONARY TUBERCULOSIS

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Hemoptysis of known pulmonary origin in tuberculosis is now treated at North Reading in a rather original manner. The plan in use was selected for its superiority after three years of gradual elimination of various forms of treatment.

Many methods commonly employed to cope with pulmonary hemorrhage were discarded after a fair trial on account of inefficiency and harmful sequelae. For instance, morphin, generally advocated and no doubt extensively used in the treatment of this complication, has fallen decidedly out of favor with us. The textbooks offer it for use by reason of the indication for the depression of respiratory activity, the allaying of excitement, and the suppression of cough. The idea is that all efforts should cooperate toward quieting the patient, but this seems to be without due regard for the alleviation of the trouble which causes the disturbance. Let one who prescribes morphin in such instances remain at the patient's bedside to observe the annoying symptoms which arise when the initial effect of the hypnotic begins to wear away, and he cannot help being impressed with the ultimately deleterious effect of that drug on the patient suffering from hemorrhage.

Our practice now is to discountenance the use of morphin and opium except in extreme cases, and to substitute therefor a treatment consisting mainly of depletive purgation. This plan seems most effective. Accordingly I feel that some description of its use and rationale merits its wider circulation.

METHOD OF TREATMENT

The patient who begins by coughing to expectorate clear blood from the lungs is immediately placed in a reclining position and is admonished to make no exertion. A curved basin is placed at the side of the face so that the patient may expectorate easily without lifting or turning his head. Any tight-fitting garments are released, but it is not well at this time to try to undress the patient.

Nitroglycerin, in 1/100 grain dose, is given subcutaneously as early as possible after the onset of the hemorrhage. Meanwhile an attendant prepares an ice-bag, also cracked ice to be taken by mouth. The ice-bag is placed at the patient's chest and if pain in any particular locality therein is complained of, the ice-bag is centered at that point. It often occurs that the patient has felt pain and soreness in a definite part of the lungs for some time prior to the hemorrhage, and at this point may be the focus of the bleeding. Hence the advisability of keeping the ice-bag over that spot.

It is well to encourage the patient and to tell him that very few patients ever die from hemoptysis and that by keeping quiet he may escape any serious consequences. A few assuring words from the physician and nurse will go a long way toward quieting the demoralization and panicky fear which many patients experience on the appearance of coughed-up blood. The patient should be told that he can help matters immensely by refraining from unnecessary coughing, by lying quietly, flat on his back without a pillow and by keeping as calm as his excited state of mind will permit.

Assuming that the patient is not suffering from extreme asthenia and is not affected with severe gastroenteritis or any ulceration along the digestive tract, a dose of magnesium sulphate from 1 to 2 ounces is administered within fifteen minutes to one-half hour after the appearance of the hemoptysis. Heroic suggestion and encouragement on the part of the physician are often necessary and is at the same time effective in securing the patient's cooperation both to swallow this medicine and to retain it. At the state sanatorium we have noted few cases in which the patient has lost the dose given, for, realizing his critical situation, he appears anxious to do his utmost to assimilate the salts; these may be more or less disguised by various substances and rendered pleasanter and easier to take.

It might be urged that this treatment is dangerous in that it might have a tendency to encourage nausea and distress, with vomiting and gagging at a most critical period, and hence occasion the release of more blood from the lungs. This has not been our experience and, furthermore, we have seen very few cases in which it might be suspected that retching, following the administration of the salts, was attributable to that cause. The beneficial results of this treatment are seen as soon as the purgative action begins. In about eight out of ten so treated hemorrhages have not recurred after the initial attack. No posthemorrhagic pneumonias ensue such as often complicate cases in which heavy doses of morphin are given and the patient feels brighter and more comfortable, in contrast to the depressing aftereffects of the morphin. Our use of magnesium sulphate depends on two clinical observations as well as other empiric reasons. In the first place, we have noted that many patients having hemorrhage at the time of onset of hemoptysis are suffering from severe constipation. The coincidence of the two conditions is so constant as to warrant the belief that a causative factor is represented, at least in some degree, by the sluggish bowel condition. A popular testimonial as to the genuine value of this tenet is seen in the fact that patients having a tendency toward hemorrhage who have been advised to take exceedingly good care to keep their bowels free are so impressed with the effectiveness of this practice in abating the frequency of the hemorrhages and streaked sputum that they learn enthusiastically to care for this matter themselves.

In the second place, a series of experimental cases was studied with regard to blood-pressure. Whenever it was necessary to relieve a patient's bowels which had not moved for some time, the blood-pressure was taken before relief and after free evacuation of the bowels by magnesium sulphate, when it was found that the blood-pressure dropped anywhere from 5 to 15 mm. (Tycos.). The blood-pressure in many cases in which there was persistent constipation was higher than is usual in tuberculous persons.

Finally we have noted the successful result secured by applying depletive purgation in cases in which hemorrhage occurs and, as in other empirical matters, this reason must be of the greatest importance.

In reviewing the records for one year, and even prior to that time, we have found it noted that a patient afflicted with a profuse pulmonary hemorrhage and treated by the usual method plus a moderate dose of morphin, would often have a recurrence of blood expectoration after the effect of the last dose of morphin was exhausted. With every hypodermic of morphin given the patient's condition would really become more serious, for although hemorrhages might not occur within the next hour or so, it was evident, nevertheless, that the reaction against the aggravated condition was only postponed. It is obvious that the prospect of reaction was intensified by each dose of morphin. Two cases in which the patients were subject to hemoptyses are herein reported and the result of the treatment we have suggested is noted.

REPORT OF CASES

Case 1.—M. S., a girl, aged 16, formerly employed in a large biscuit factory, was admitted to the sanatorium, May 15, with moderately advanced pulmonary tuberculosis. The sputum was positive for tubercle bacilli on the first examination.

Examination of the chest revealed well-established infiltration of the upper lobe of the left lung with scattered moist râles. There were signs of beginning infiltration in the lower lobe as well as at the right apex. The nasopharynx and larynx showed incipient atrophic change but no bleeding points or ulcerations. The patient was poorly nourished but in fair strength.

The clinical course in this case was uneventful until June 8, when two severe hemoptyses occurred. Each time the regulation treatment given was nitroglycerin, grain 1/100, subcutaneously and application of an ice-bag, followed a few minutes later by a hypodermic of morphin, grain ¼, and atropin, grain 1/100, given to allay undue excitability, which was a marked characteristic of the patient. The bleeding continued and on the second day two larger hemorrhages occurred. There had been almost no evacuation of the bowels for about sixty hours, laxatives having no effect, and enemas producing very poor results. Some relief, however, was soon obtained and it was noted that streaked sputum was subsiding. For the next two weeks bloody sputum was observed daily. Incidentally, the constipation was very obstinate.

June 22 the patient suffered a second series of severe hemoptyses. It was learned that no bowel movement had occurred for forty-eight hours. The first hemorrhage was preceded for about nine hours by a sharp pain in the upper left chest. It should be stated that the intelligence of this patient was exceedingly meager, and therefore the amount of cooperation accorded the nurses and physicians correspondingly small.

The first hemorrhage of this date was at 5:30 a. m., and amounted to 2 ounces. In addition to the routine treatment of nitroglycerin administration, sodium phosphate ½ ounce was given, but without effecting purgation. A hypodermic of morphin and atropin of the usual dosage was also given. At noon a 4-ounce hemorrhage occurred; nitroglycerin 1/100 grain subcutaneously was again given, the application of ice-bags renewed, and morphin ⅛ grain hypodermically administered. One hour later a full dose of magnesium sulphate (1 ounce) was given, with no result. At 3:30 p. m., 5:30 p. m., and 9 p. m., hemorrhages recurred in amounts respectively 15, 6, and 6 ounces.

The pulse was thready and rapid, and as the patient had lost much blood the outlook was quite poor. Although the indications appeared to favor enteroclysis or hypodermoclysis, we determined to try to obtain depletive purgation for empiric reasons.

Accordingly magnesium sulphate, 3 ounces, was given in solution and the patient was encouraged to retain it; in less than an hour large watery movements began, and hemorrhage did not recur.

The following day the sputum was entirely clear of blood and the patient, although weak, was quite comfortable. The following week the patient rallied splendidly, escaping the posthemorrhagic pneumonia which so frequently complicates these situations, particularly when such frequent doses of morphin have been used.

No more hemoptyses occurred to Dec. 21, 1912, when the patient was discharged from the institution as a "quiescent" case.

The other example of this class of cases presents a record essentially the same except that this case was not only of advanced consumption but also of advanced alcoholism, a not infrequent complication.

CASE 2.—A plumber, aged 28, stated that he had first noticed the lung trouble four months prior to admission. He had had no hemorrhages; the sputum was positive for tubercle bacilli and the disease was far advanced in both lungs. He arrived at the hospital in an intoxicated condition and immediately began to oppose every sort of treatment prescribed, objecting to remaining in bed because it made him "nervous," "sicker," and protesting a variety of other alleged ill effects. The temperature ranged from 101 to 103 F., the pulse was rapid, the cough very distressing and marked tremors indicated the need of absolute rest. The patient became more unruly and almost unmanageable in the next few days and refused absolutely to cooperate in any way with those having his case in charge.

Blood soon began to appear in the daily specimens of sputum and as the patient was constipated, full doses of salts were ordered. The patient refused all medication. Hemorrhage precautions were ordered on November 1, but the patient was soon found walking about the ward, violating all orders and advice given for the prevention of hemoptysis.

November 2 a hemorrhage of 16 ounces occurred at noon; the patient refused to allow the nurse to give nitroglycerin subcutaneously and threw the ice-bag on the floor. There was a smaller recurrence of hemorrhage throughout the day and that night. November 3 a hemorrhage of 12 ounces occurred at 7:45 a. m., and blood was expectorated at intervals through the morning. The patient lost much blood and became quite weak and badly frightened. He was put on the danger list. He told the nurse and physician then that he would take anything. Two large doses of magnesium sulphate were given which effected the passage of several watery stools. There were no further hemorrhages and streaking in sputum subsided; the latter continued in slight amount, however, for six days. Active catharsis was kept up daily. The patient's hostile attitude changed to a better frame of mind. He is at present in the hospital, but has had no recurrence of hemorrhages.

The after-treatment, once the blood stops coming in any amount, is a matter of keeping the patient at rest, providing some liquid non-irritating nourishment and keeping the bowels clear. For at least twelve hours I keep the patient flat on the back without a pillow and insist on the use of the bedpan. The ice-bag is kept at the chest from two to three hours only and at the same time the rest of the body is kept as warm and as free from cramp as is consistent with absolute rest. It is perhaps better to remove the ice-bag from the chest early, and to replace it at intervals should necessity indicate. Much harm can be done by prolonging the application of cold to the thorax, for there comes a time when its contractile effect on the pulmonary blood-vessels is succeeded by a paralytic relaxation with ensuing trouble.

The tendency is to continue the ice-bag indefinitely, especially when it is left to the nurse, who regulates a matter of good treatment quantitatively. As long as the thorax is kept cold a warm water-bottle may be applied to the patient's stomach or feet, usually with considerable relief. The patient should be encouraged to look on the matter as cheerfully as possible, and a few hopeful words will often do a great deal toward dissipating worry and in adding to the patient's comfort. For medicine, sodium nitrate, 1 grain, may be given every three hours, with the hope that the blood-pressure will be reduced. This sometimes causes severe headache and its use is then discontinued. Empirically there seems to be no great benefit following its administration and its use is, therefore, only in accordance with the indication of a need to lower the blood-pressure.

Calcium sulphid in 1/6 grain tablets to the extent of three to six tablets three times daily are much in favor with us for the reason that it seems to cause the colored sputum to clarify more quickly, the supposition being that this drug renders the blood more coagulable. The hypothesis is apparently borne out and substantiated to some extent in practice.

If cough is very severe, codein by mouth in small doses will do much toward quieting the patient. I prefer to use this drug rather than heroin or morphin.

For nourishment the patient should receive 4 ounces of cold milk to which may be added a scant teaspoonful of lime-water every three hours. If the hemorrhage has occurred in the daytime, in the night I like to give the patient liquid nourishment, neither hot nor very warm, but with the chill taken off to relieve the empty stomach and to provide sustenance. If the sputum becomes clear within eighteen hours, semisolid nourishment in the form of dropped eggs may be given. I think it best not to starve the patient more than is necessary, for it seems better to provide means of nutriment which fulfils two purposes. Not only does it give the patient the means of making up the blood loss which has been sustained, but it also quiets and soothes the stomach, causes greater equilibrium of the circulation, more blood being centered in the splanchnic region and less about the affected pulmonary focus.

It is perhaps unnecessary to advise that visitors should not be permitted and that all causes of worry and excitement should be forbidden. The condition of a hemorrhage in a patient in this institution was aggravated and recurrence of hemorrhage stimulated by a domestic factional dispute carried to his bedside and waged there relentlessly at every opportunity which could be obtained until all his visitors were barred, whereupon the patient began to recover.

Formerly our hemorrhage patient, to whom morphin and atropin was administered in full doses, suffered a run of high temperature for a number of days following the hemoptysis. Sharply contrasted with this happening is the normal temperature and pulse of the patient treated by the latter plan. With the gastro-intestinal tract clogged and of little use in carrying off the accumulated toxic material in the bowels it is not surprising that the former condition of high fever, a manifestation of increased toxemia, should obtain. But with a clear and actively functioning bowel the amount and effect of toxemia is reduced to a minimum. Furthermore, the patient is ready to assimilate nourishment as soon as feeding can be safely resumed. Thus double advantage is gained, for, instead of increased wasting, there is quick resumption of an almost normal assimilation, and the relapse occasioned by the period of hemoptysis is of much smaller proportion. The loss of weight, in this latter case, may amount only to a few pounds, whereas formerly a loss of 10 or 12 pounds would occur and the loss sometimes be sufficient to handicap the patient beyond all hope of recovery.

The bedpan may be discontinued on the third or fourth day after the attack, but the patient is not to be allowed up any length of time for at least seven days after the clearing of all color from the sputum. While the patient remains in bed active massage of the lower extremities and body should be prescribed in the form of rubs with liniments, preferably oily camphor preparations, in order to make the patient comfortable and to assist maintaining an equilibrium of the circulation.

I have used preparations of suprarenal extract a sufficient number of times to disclose any material value it might have therapeutically in treating hemoptysis, but nothing has appeared to influence us in its favor. Instead of depending on the physiologic action of the various drugs recommended in treating hemoptysis we prefer the far more certain mechanical effect of depletive purgation.

Only two hemorrhage patients were treated by the production of artificial pneumothorax, and in both instances success was attained. The uncertainty as to which section of the lungs is producing the blood, unless the hemoptysis is strictly unilateral, warns against this practice for obvious reasons.

Constricting the lower limbs with a tourniquet, one at a time, and thus restricting the confines of the circulation, was formerly attempted when the amount of bleeding became dangerously large, but was without extraordinary result.

With the exception of occasional allusions to textbooks I have purposely refrained from citing the literature, in which there is a considerable accumulation of matter on this subject. I have not chosen to compose a critical discourse, but only to state the method of treatment of hemoptysis evolved by observation and practice in a clinic of fifteen hundred patients at the North Reading State Sanatorium.

SHIP-BORNE CHOLERA

THE SEA AS A FACTOR IN THE TRANSMISSION OF ASIATIC CHOLERA

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The seasonal advance of Asiatic cholera from East to West, over mountains and continents, has long been known to follow the paths of human travel and commerce. In the past century many wide-spread epidemics of the disease have embraced the entire continent, but since 1873 it has never prevailed to any extent in this country, although ship-borne cases have occurred from time to time at the various quarantine stations. It may be interesting to record a recent passing of the quarantine line by the disease, in a port separated by a sailing distance of 4,000 miles of ocean from the infected point of departure, and after a direct voyage averaging between ten and sixteen days at sea. The port of New York occupies this position with regard to the Mediterranean and eastern European ports, into which the stream of emigration is easily the largest of any port in the United States and also in the world. The volume of this traffic may be judged by the number of emigrants medically examined at quarantine,[1] which for the year ending 1911 was 533,485 and for 1912, 676,660. The nationality of the greater part of this large army is Italian, Greek, Turkish, Polish, Hungarian and Russian, with a certain number of persons from Asia Minor and the far eastern European lands. The existence of cholera in Italy, Russia and Turkey in Asia, had been noted with the onset of the summer season of 1911. Two deaths from cholera had been reported from Reggio di Calabria, Italy, on June 8, and in June 14 two more cases had occurred at Serrastretta and one at Lungro. The number of cases subsequently reported, however, did not indicate the presence of any extensive epidemic in Europe to warrant the taking of any special preventive measures by the health authorities on this side. The possibility of a cholera invasion of New York City appeared to be remote. The careful routine examination of passengers at foreign ports of departure, with an observation period of five days before sailing, and subsequently the disinfection of baggage and destruction of all foodstuffs carried by emigrants, was considered with reason to be a reliable control on ship-borne cases of the disease, which, with the long period for observation at sea, would seem to constitute a natural barrier against infection. In the following months of June, July and August, a continuous succession of cholera-infested ships arrived at quarantine, New York, and among the detained passengers many cholera carriers were found. It was thus shown that even with the strictest precaution against infection at ports of departure, the distance from an infected locality is no safe-guard against sea-borne cases of cholera. The potential infective ability of the healthy bacillus-carrier also has to be seriously regarded by quarantine authorities. On June 13, 1911, the S. S. *Berlin* arrived in New York and reported the death, with cholera symptoms, of a steerage passenger thirty hours after leaving Naples. Discharges from this passenger preserved until arrival were bacteriologically diagnosed as cholera. The following day, June 14, the S. S. *Europa* from Naples reported one steerage passenger sick with cholera symptoms. On his removal to the Quarantine Isolation Hospital, the disease from which he was suffering was confirmed bacteriologically as cholera. The discharges preserved from another passenger who was ill during the voyage were also confirmed as cholera.

On June 20 the S. S. *Duca degli Abruzzi* from Genoa and Naples reported three cases of cholera-like sickness among the passengers and crew; one of these patients died on arrival at quarantine and one member of the crew died while being conveyed to the quarantine hospital. These two cases were both diagnosed bacteriologically as cholera. A few days later two further cases of cholera developed among the detained passengers from this ship. After five days' detention for observation at quarantine, and one day in Ellis Island, the passengers were released. Four days later, June 30, one of these, an Italian boy aged 17, after proceeding to Auburn, N. Y., was taken sick with cholera-like symptoms, and died on July 1. Cholera was not diagnosed bacteriologically. Another passenger from the same ship, an Italian woman aged 33, sickened in Brooklyn, N. Y., on June 30 with suspicious cholera. She was returned to the quarantine hospital where she died on July 4. Cholera was diagnosed bacteriologically. These two cases were remarkable for the length of time between the known exposure to infection and the development of the disease, it being longer than the usually acknowledged incubation period for cholera. The probable explanation of this occurrence was perhaps an infection immediately before release from quarantine, by an undetected cholera carrier among the detained passengers from the infected ship.

On June 21 a passenger who had suffered from suspicious cholera symptoms was reported on the S. S. *Laura*, which sailed from Patras, Greece, on June 5, calling at the cholera-infected port of Palermo on June 7, where passengers were embarked. No cholera had been reported from Greece at that time and the voyage occupied sixteen days from Palermo. It was not remarkable that two cholera carriers were isolated at quarantine from the passengers who had been in intimate contact with the case on board ship. The immediate result of the development of cholera cases among released emigrants on shore was the issue by the Treasury Department Circular 45, 1911, requiring that the observation period of passengers detained from infected ships be extended to ten days at quarantine, unless after five days' observation bacteriologic examination should show them free from the cholera vibrio. Each case on confirmatory bacteriologic diagnosis was transferred to the Swinburne Island Quarantine Hospital for treatment.

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[1] Annual Report of the Health Officer of the Port of New York, 1912.

At this time two further cases of cholera had been reported on shore. One, a Spanish sailor, who had arrived in New York on July 2 on the S. S. *Teodoro de Larrinaga,* and after being ashore for fifteen days was suddenly taken ill on the street with severe intestinal symptoms and collapse. Cholera was diagnosed at the Bellevue Hospital, to which he was conveyed, and from which he was removed to Swinburne Quarantine Hospital, cholera being bacteriologically confirmed. This case is remarkable in that there was no cholera reported by the ship on which he traveled, which had come from South America by a round-about route, including a call at Boston before coming to New York. The voyage occupied forty days, and no cholera had been reported from South America. If the infection had taken place on board ship, the incubation period was fifteen days before clinical symptoms became urgent enough to demand hospital treatment. Even if he were a cholera carrier developing an acute attack the initial infection remains a mystery. On July 5 the S. S. *Moltke* arrived from Italian ports with one case of cholera among the crew. The passengers were transferred to Hoffman Island for observation, where eleven further cases developed, making twelve cases of cholera from this ship, and nineteen cholera carriers were found among the detained passengers and crew.

A watchman who had been employed by the quarantine department to guard detained passengers on Hoffman Island, while visiting relatives on July 13, was suddenly seized with intestinal colic. He was transferred to Swinburne Island, where he died two days later; the bacteriologic diagnosis was cholera. This man had been in intimate contact with healthy passengers only, who had been exposed to cholera infection, and the presumption is that he was infected by a cholera carrier.

The S. S. *Perugia,* on arrival on July 15, reported two cases of illness on board at sea, among the passengers and crew. The cases now convalescent were bacteriologically confirmed as cholera.

With the arrival of the S. S. *Venezia* on August 11 from Naples and Palermo a suspected cholera case was reported among the crew. The patient had sickened on August 3, but was well on arrival. Bacteriologic diagnosis was negative for cholera. A passenger had also become sick at sea on August 7 and had died on the following day with cholera-like symptoms. On arrival, specimens from this case were positive for cholera. One cholera carrier was found among the detained passengers. The S. S. *König Albert* reported, on arrival, two sailors sick with cholera symptoms during the voyage from Naples and Palermo. On arrival one of these cases was confirmed bacteriologically as cholera. Two cholera carriers were found among the crew; after routine examination the remainder of the passengers were negative for bacillus carriers.

Three deaths, in children who had clinical symptoms of cholera, during the voyage from Italian ports were reported on August 18, by the S. S. *Re d' Italia.* The discharge preserved from these children, after bacteriologic examination, showed one of these deaths as being due to cholera. One member of the crew and a passenger were sick on arrival in New York, the former case being confirmed as cholera, and one cholera carrier was detected among the passengers in detention. With the arrival of the S. S. *Europa* on August 25, reporting a death from supposed cholera at sea, which was confirmed bacteriologically, the last of the cholera-infected ships were reported at quarantine.

SUMMARY OF CHOLERA CASES AT NEW YORK, JUNE 14 TO AUGUST 18, 1911

Fatal cases of cholera occurring at sea	6
Cases of cholera occurring at sea, patient arriving well	4
Cases of cholera occurring at sea, patient arriving sick	6
Cases developing at quarantine after arrival	15
Cases occurring among released ship's passengers and crew	3
Cases among quarantine employees	1
Cholera-bacillus carriers detected at quarantine	31

SPECIAL MEASURES TAKEN BY THE HEALTH AUTHORITIES

In consequence of the continual arrival of cholera-infected ships in the port of New York, special measures were instituted by the federal and state health authorities, including the issue on July 16, by the U. S. Treasury Department, of Circular 47, requiring the detention of all steerage passengers from cholera-infected ports until bacteriologic examination had proved them not to be cholera carriers. To insure the proper carrying out of the routine examination necessitated by this order the quarantine laboratory staff was reenforced by trained assistants from the state laboratory at Albany and from the U. S. Public Health Service at Washington. The steamship owners were urged that they advise their agents abroad not to accept immigrants from infected localities, in order to prevent congestion at New York quarantine. State and local authorities were asked to exercise special superveillance over newly-arrived emigrant laborers, and in the event of the occurrence of a case of acute gastro-enteritis or diarrhea to notify the State Board of Health without delay. Expert aid was offered by the federal authorities to any local health board requiring aid for the diagnosis of suspicious illness or for the inauguration of special preventive measures.

THE ROUTINE EXAMINATION FOR CHOLERA CARRIERS

The compulsory bacteriologic examination of all passengers from cholera-infected ports made necessary by the treasury order of July 16, 1911, required the taking of rectal swabs from every steerage passenger, as well as from the members of the crew. With practice the routine procedure became most expeditious, so that a thousand or more emigrants could easily be handled in one day. In the beginning, swabs from the rectum were deposited in sterile tubes, which were conveyed to the laboratory and there inoculated into Dunham's peptone solution. To save time and facilitate the procedure enough tubes of Dunham's medium were conveyed on board the steamship in wire baskets, holding one hundred each. The swabs, similar to those used for diphtheria work, were sterilized in paper bundles of fifty or one hundred. The passengers were first separated, the women and children being handled by a staff of women doctors and nurses. Each passenger with his name card was rapidly passed before the doctors in a convenient room such as the dispensary or ship's hospital. The swab was moistened in peptone water and inserted well above the anal sphincter. It was found best to obtain a well fecal-stained specimen, which was dropped into a peptone tube and numbered to correspond with the number on the identification card.

On completion of the procedure the peptone cultures were conveyed ashore and incubated for six hours at 37 C. (98.6 F.). Subcultures were then made in fresh peptone water and incubated for from nine to ten hours. Smears from the subcultures were stained with dilute carbolfuchsin (1:7) and examined microscopically. Any vibrio found was examined for motility and plates of alkaline agar made (3/10 to 5/10 alkaline to phenolphthalein). After incubation for from twelve to twenty-four hours the plates were examined, and any suspicious organisms present were tested for agglutination against an anticholera serum of high titer. For the purpose of simplifying the procedure of vibrio detection an attempt was made to utilize the known fermentative action of vibrios on saccharose for diagnostic purposes. An alkaline saccharose-peptone water was employed containing phenolphthalein as an indicator, the presence of sugar-fermenting vibrios being shown by the decolorizing of the medium. By the procedure good results were obtained in the limited time the special medium was used.[2]

A passenger found harboring the cholera vibrio was immediately isolated to Swinburne Island Hospital, where he was treated as a cholera patient. On a negative bacteriologic finding all passengers were discharged from detention. During the four months of routine examination for cholera carriers, 26,678 passengers were bacteriologically examined at quarantine, the number for each month being: July, 1,777; August, 5,105; September, 5,700; October, 9,389; November, 5,807.

THE CHOLERA VIBRIO

The peptone water for enrichment, and similarly the Liebig beef-agar medium for plates were employed, with an alkaline reaction to phenolphthalein of from 0.3 to 0.5 per cent., and this was found to be the most favorable reaction for the growth of the cholera vibrio. The cholera red was not obtained to any degree in peptone cultures containing a mixed intestinal flora, it was, however, fairly consistently present in pure cultures.

The colonies of the cholera vibrio in pure culture on alkaline agar plates, although readily distinguishable from those of other intestinal bacteria, were not so easily differentiated from the cholera-like vibrios. After twenty-four hours' incubation the growth was seen flattened, round colonies, with a clear-cut even edge, finely granular, with sometimes larger granules at the centers; yellow by reflected and bluish by transmitted light. There was also an opalescent appearance by transmitted sunlight. The odor was generally fecal, and the colonies presented an appearance of extreme fluidity, so that when touched with a platinum needle they tended to flow.

Typical motility was generally present in twelve-hour peptone-water cultures. In making a hanging-drop preparation, it was found that if any pellicle present were gently moved aside by tilting the tube and the platinum loop inserted just below the surface actively motile organisms were more certain to be obtained. The characteristic motility could be strikingly observed with the dark-field illuminator.

THE CHOLERA-LIKE VIBRIOS

A striking feature observed during the routine examination for carriers was the large number—over one hundred—of vibrios isolated from the fecal cultures, which gave a negative reaction with the specific serum. A detailed description of these atypical vibrio forms I have made elsewhere.[3] The morphologic and cultural resemblances to the cholera vibrio were so close in some instances that definitely distinctive features were difficult to find. As a rule the indol reaction was absent or slight, and they were all non-pathogenic to animals, even in large doses. In some of the strains isolated, saprophytic properties, such as pigment formation, clearly indicated the nature of the organism.

The presence of these aberrant vibrio types in association in the cholera cases has been frequently observed, notably by Zlatogoroff,[4] and by McLaughlin and Whitmore[5] in the Philippines, but the exact significance of the occurrence is yet undetermined. A curious incident bearing on this association was noted at quarantine in the isolation of the greatest number of non-cholera vibrios at one time, in the passengers of a vessel among whom two cholera carriers were found.

THE DIAGNOSIS OF CHOLERA

The occurrence during cholera epidemics of non-pathogenic vibrios, typically cholera-like in morphology, motility and cultural appearances, has caused such characters to appear of less account in the final differentiation of the cholera vibrio. Of more importance in the diagnosis of cholera are certain reactions of the body resulting from the invasion by the cholera vibrio, which are manifested especially in a powerful activation of those tissues concerned in the formation of the various cellular antibodies, the bacteriolysins, the agglutinins and precipitins. This phenomenon is witnessed in cholera convalescents, as well as in animals immunized against the specific organism.

Agglutination.—Although the agglutinating power of various strains of the cholera vibrio varies somewhat at times, it is always sensitive to the action of a strong antiserum, positive agglutination taking place with high dilutions of the serum, such as 1:10,000 and 1:32,000. The observation of agglutination may be carried out by the macroscopic method, using Wright's tubes. An emulsion of a 24-hour-old agar culture of the suspected organisms in broth or normal saline is mixed with the antiserum in various dilutions and drawn up into glass sedimentation tubes, which are sealed in the flame. Readings are taken at the end of two hours at 37 C. (98.6 F.), or twenty-four hours at room temperature. Controls with normal saline or normal horse-serum should be employed at the same time. Similarly, agglutination may be observed in hanging-drop preparations with the microscope. For general purposes the reaction is satisfactorily and quickly carried out by means of a macroscopic method with the naked eye. On an ordinary glass slide, an emulsion of the suspected organism is mixed with the diluted antiserum by means of a platinum loop. Immediate agglutination takes place with the cholera vibrio as shown in the formation of floccules and clumps in the hitherto opaque emulsion. It was observed that the maximum agglutination power of the cholera vibrio was seldom found to be as high as the titer of the serum employed. In suspected cholera convalescents, in which the cholera vibrio cannot be demonstrated in the stools, the patient's blood-serum may be tested for agglutination against a known cholera culture.

Pfeiffer's Reaction.—The reaction of Pfeiffer depends on the effect of a powerful cholera bactericidal serum on the cholera vibrio. An emulsion of the suspected organism is injected into the peritoneal cavity of a guinea-pig, together with the bactericidal serum. A positive reaction is given if specimens of the peritoneal fluid removed at intervals of a few minutes show disintegration of the vibrios. A control experiment should be made with normal serum. This reaction is specific for cholera and enables a definite diagnosis of cholera to be made.

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[2] Creel: Jour. American Pub. Health Assn., December, 1911, p. 899. Bendick: Jour. American Pub. Health Assn., December, 1911, p. 905.

[3] Craster: Jour. Infect. Dis., May, 1913, xii, No. 3, p. 472.

[4] Zlatogoroff: Centralbl. f. Bakteriol., 1909, xlviii, No. 5, p. 684.

[5] McLaughlin and Whitmore: Philippine Jour. Sc., 1910, v, 403.

Complement-Fixation.—It has been shown by the reaction of Bordet and Gengou[6] that specific serums contain a certain substance (*substance sensibilisatrice*) which, when combined with its corresponding bacterial antigen, has the power of fixing another substance "complement," present in all normal serums, in this way preventing hemolysis when added to sensitized capsules. This binding of complement by a specific cholera serum and a culture of cholera vibrios may be employed for the differential diagnosis of an organism suspected to be the cholera vibrio. The anticholera serum is inactivated by heating at 55 C. (121 F.) for thirty minutes. A twenty-four-hour agar culture of the suspected organism is used as antigen, previously killed by heating to 60 C. (140 F.) for one hour and dissolved in physiologic salt solution. If the inactivated specific serum and the bacterial culture (antigen) is combined with normal guinea-pig serum to supply complement and after incubation for an hour at 37 C. is then added to a mixture of hemolytic serum and blood-corpuscles, no hemolysis takes place if the suspected organism is the cholera vibrio, complement having been absorbed by the combination of the specific serum with its antigen, the cholera vibrio.

THE CHOLERA CARRIER

It is well known that perfectly healthy persons may harbor the causative agents of certain diseases, notably in the case of typhoid fever and diphtheria, either as a persistent continuance of the organism in the secretion of the body after an attack of the disease or as an infection with the specific microbe without manifest subjective symptoms. The existence of a parallel condition in persons during cholera epidemics was observed by Rumpel in Hamburg, Metchnikoff in Paris, Vogler in Altona and Ivanoff in Berlin.

Thirty-one cholera-bacillus carriers were found among ships' passengers bacteriologically examined at quarantine during the period from July to November, 1911. A definite history of a recent intestinal attack was obtained in four of these carriers. The proportion of carriers detected to examinations made was considerably less than the number reported under similar conditions at Naples, 1910; at that time twelve carriers were found in 1,400 persons.[7]

Treatment.—Every person who was a cholera carrier was isolated and treated as a cholera patient. The difficulties in the treatment of such carriers are inseparable from the apparent condition of good health and freedom from subjective symptoms which are always present in these patients. Strict isolation was enforced, with all fecal matter rigidly sterilized until a negative bacteriologic finding was obtained. It was observed that a carrier detained at quarantine discharged cholera vibrios in the stools at irregular periods, between which intervals a negative finding might be obtained bacteriologically.[8] These negative periods were frequently of several days' duration. The potential danger to the public in the careless release from detention of a carrier of this kind would be manifestly great.

Duration of the Infective Period.—The length of time during which a cholera-bacillus carrier continues to be infective has been stated to vary within wide limits. Zlatogoroff[9] has recorded the isolation of the cholera vibrio from the stools of a person one year after recovery. Pasquale[10] succeeded in isolating the specific organism from the stools twenty-seven days after an attack of cholera. Saccone,[7] with an extensive experience, found cholera carriers to be infective between eleven and fourteen days. The majority of the carriers isolated at quarantine remained infective from a few days to two weeks or more; in one case the comma bacillus was present for fifty-four days.[8] Three or more negative bacteriologic findings at intervals of two days for a week or longer were required before a cholera carrier was released from detention.

THE CHOLERA CASES

Twenty-four cases of cholera were treated at the Quarantine Isolation Hospital, with thirteen deaths; a rate of mortality of 54.1 per cent. Five of these patients were moribund on admission. The duration of an attack of cholera and the rapidity of its termination is dependent on the virulence of the infective process, so that the characters of the disease varied somewhat in the individual. In the acute cases the classic signs of vomiting, purging, collapse, muscular cramps and coma were early in evidence, the stools being sometimes continuous, with incontinence of feces. The typical rice-water evacuations seldom showed any fecal staining and from them the comma-bacillus was obtained in pure culture. One case of cholera sicca was remarked; the patient had no stools; the symptoms were collapse with cyanosis, with an abdomen distended with fluid contents. Recovery took place. The milder cases of cholera showed only a slight diarrhea with no great accompanying physical discomfort.

Although the skin temperature is subnormal in cholera, the rectal temperature was found to be consistently high (102 to 103 F.), with subnormal intervals throughout the attack. This fluctuating rectal temperature at times showed wide ranges during the day; a difference of 6 degrees Fahrenheit between the morning and the evening readings was recorded, and a subnormal morning temperature frequently rising to 102 to 103 in the evening. This oscillating temperature often persisted for some days after all clinical symptoms had disappeared. In certain of the fatal cases in which excessive reactive processes were manifested in the hyperpyrexia the rectal temperature before death rose to 109 F.

Four patients succumbed on the first day of illness, one of these between sunrise and 11:45 a. m. and another within eleven hours of onset. Three died on the third, three on the fourth and one each on the second, sixth and eighth days, respectively. In the non-fatal cases the cholera vibrio persisted in the stools for various periods of time after the cessation of acute symptoms, usually from the seventh to the fourteenth day, and exceptionally for much longer periods.

SUMMARY

During June, July and August, 1911, ten cholera-infected ships arrived at quarantine, New York, from Mediterranean ports, bringing a total of 5,411 passengers and 1,789 members of ships' crews having been exposed to cholera. Six patients arrived sick and four were convalescent from the disease. Twenty-four cases were treated at the isolation hospital on Swinburne Island, with thirteen deaths. Two cases occurred among released passengers in New York City and state, and one member of a ship's crew. One fatal case occurred among the quarantine employees. Thirty-one cholera carriers were detected by routine examinations; these were isolated and treated as cholera patients. Four of these gave definite histories of a recent sickness with diarrhea. During the four months of routine examination of passengers from infected ports for cholera carriers, 26,678 persons were bacteriologically examined.

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[6] Bordet and Gengou: Ann. de l'Inst. Pasteur, 1901, xv, 289.

[7] Saccone: Ann. d'med. navale, March, 1911, p. 315.

[8] Creel, R. H.: An Unusual Cholera Carrier, THE JOURNAL A. M. A., Jan. 20, 1912, p. 187.

[9] Zlatogoroff: Centralbl. f. Bakteriol., 1911, lvii, No. 4.

[10] Pasquale: Glor. med. d. R. esercito ed R. marina, 1893, p. 936,

Over one hundred non-cholera vibrios were isolated during the routine examination. Many of these resembled the vibrio of cholera so closely that no difference was possible, except the negative reaction with the specific serum. In the cholera cases, a fluctuating rectal temperature of a degree above or below normal persisted for some days after all clinical symptoms had subsided, and after the specific organism had ceased to be demonstrated in the stools. The cholera carriers with no subjective symptoms could be infective up to fifty-four days. The cholera cases remained infective by the presence of the comma-bacillus in the stools for one to two weeks after all symptoms had abated, exceptionally for longer periods.

CONCLUSIONS

Time and length of voyage from infected districts does not confer any special immunity against the occurrence of Asiatic cholera in this country. The well-established existence of the cholera-bacillus carrier has altered considerably the aspect of cholera prevention, for we have to deal not only with real, but also with potential agents of infection. The high efficiency of present-day quarantine procedures has rendered the possibility of spreading infection from cholera cases extremely slight. The real danger to the public is not alone the person sick with the disease, but also the person infected with the specific organism and presenting no apparent symptoms of illness. In typhoid carriers the gall-bladder is known to be the store-house of the infecting organism. That a similar condition may exist with cholera carriers is suggested by the observations of Greig,[11] who demonstrated by cultural methods the presence of the cholera vibrio in the gall-bladder eighty-one times out of 271 cases of fatal cholera. In the prevention of cholera, besides the effective isolation of the sick there has developed in our experience at quarantine, the necessity of extreme caution in the release of contacts or fellow passengers from detention, before a routine bacteriologic examination has proved them free from the cholera vibrio and even after such a routine procedure there remains always a possibility of the escape of a bacillus-carrier who may have been examined during a negative interval of an intermittent discharge of the infecting organism.

When sporadic cases of cholera occur in any community (the so-called cholera nests) it would seem that the bacteriologic examination of drinking-water and of food, although advisable always, is not of the same importance as a diligent search for the true source of infection, the infected, presumably healthy person, the proper means for whose detection, although involving a state in great outlays of money and time, are of necessity justified in emergencies for the proper preservation of the public health and confidence.

I am indebted to the courtesy of Dr. F. C. Clark, chief medical officer of Swinburne Island Isolation Hospital, Quarantine, N. Y., for the opportunity to review the clinical reports of cholera cases and cholera carriers.

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[11] Greig: Lancet, November, 1912, ii, p. 1423.

THE "WASSERMANN-FAST TABES"

A SEROLOGIC PRECURSOR OF TABOPARESIS

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The question of tabes from a diagnostic standpoint offers very few difficulties. Where clinical manifestations are few and indefinite, laboratory aids as elaborated by the latest serologic methods give ready and at times conclusive evidence of the presence of this disease. It is not my purpose to travel over well-beaten paths of diagnosis, be it clinical or serologic, but to offer to the neurologist a guide to therapy and to assist in the rendition of a prognostic opinion in this disease. To the serologist it may also be of interest to know that some forms of tabes behave differently from a serologic attitude than others. As there are different types of tabes clinically, so there are also various serologic manifestations of this disease. The clinician is thoroughly familiar with the form of disease which will ultimately present the full picture of taboparesis and is also acquainted with the type that is purely degenerative and lacks all evidence of activity in the meninges. The serologic development of the last few years in connection with diseases of the nervous system not only gave us the laboratory accompaniment of this disease, but also enabled the careful observer to point out here and there occurrences in the analysis of the serum and the fluid that are as important as the ability to diagnosticate this malady. It seems to me that neurologists are beginning to recognize the value of analyses of the cerebrospinal fluid and are gradually becoming more familiar with the utilization of laboratory data. One of the facts that I, together with Dr. L. Casamajor, pointed out in 1912, in connection with tabes, was the very favorable clinical and serologic reactions obtained with tabes of the "hyperlymphocytic" type. Our observations still hold good after a large additional number of such cases has been studied. On the other hand, we were considering the treatment of tabes that showed no cerebrospinal fluid abnormalities as rather inconsistent. Taking these things together, one can at a glance appreciate how much less informed we were in regard to the gauging of treatment before the era of "neurologic serology" as compared with the newer methods of procedure. The value of serologic data increases with their number, and it is with this in view that I have undertaken the writing of this article.

Having studied serologically over 650 cases of tabes of various types, and in some instances having observed the changes in the serum and cerebrospinal fluid on as many as twelve occasions in the same patient to note the adequacy of therapy, I had the opportunity to note the effect of various therapeutic procedures on the serology of a large proportion of cases and carried away the impression that there are distinct types of tabes that can be properly judged only after a thorough course of strenuous treatment. Although the patient may at the time of the first analysis show the serologic picture of tabes of the "hyperlymphocytic" type, the result of vigorous treatment will tend to show whether or not the serology is amenable to therapeutic effort. I have observed a number of cases in which despite the frequency, dosage and specificity of the remedy, the serum would still show a positive Wassermann reaction. A few more advanced cases would also show an unchanged positive Wassermann in the cerebrospinal fluid. I have designated these cases as "Wassermann-fast tabes" in contradistinction to those forms of the disease that, as shown by the Wassermann test, yield readily to therapeutic efforts. When one studies the serology of general paresis one is struck with the large percentage of positive Wassermann reactions obtained on the serum and spinal fluid of this disease. When the subject of percentage of positive results is studied critically, particularly the observations that give 100 per cent. positive reactions even in general paresis, one is fully justified in asking the question: Is it possible that the cases reported were never treated with the remedies commonly used in such cases? Still further: If they were treated, some even with great thoroughness, is it possible that the Wassermann reaction remained unchanged and gave 100 per cent. of positive results? These questions are rarely asked and the results are accepted unchallenged. There should be no 100 per cent. of positive Wassermann reactions, and the experience of the majority bears out my contention. The reason why the percentage of positive Wassermann reactions in the serum from tabetics ranges between 55 and 70 is that the treatment of many of these cases was, from the point of view of serology, apparently successful. The low percentage of positive results also speak for the amenability of the serology of this disease to therapy, for it is self-evident that the easier it is to influence a disease with proper therapeutic measures, the fewer positive results are obtained with the Wassermann test. The number of cases of tabes that give positive Wassermann reactions are composed chiefly of patients who were not treated recently, or were treated insufficiently or belong to the type of cases of "Wassermann-fast tabes." The reason why general paresis gives the greatest percentage of positive Wassermann reactions is due chiefly to the fact that very few positive reactions in this disease become negative after treatment, in other words, general paresis typifies the Wassermann fast neurologic disorder of syphilitic origin.

TABLE 2.—RESULT OF TEST IN TABOPARESIS, CASE 2*

Treatment	Serology Performed	Serum W. R.	Cerebrospinal Fluid Analysis		
			W. R.	Glob.	Lymphoc.
Hg. inunct. 30 doses 4 gm.	3 weeks after therapy.	+	+	+	53
6 weeks later, 21 injections Hg. salicyl.	4 weeks after therapy.	+	+	—	53
8 months later, 606 0.6 in vein	4 weeks after	+	+	—	50
1 week later, 606 0.6 in vein	3 weeks after	+	+	—	41

* Reduction of Fehling's solution normal throughout.

The negative reactions obtained with general paresis are composed chiefly of those of the early cases which frequently give a negative Wassermann reaction in the serum and a positive result in the cerebrospinal fluid. It is very proper to apply to the serologic analogy of the "Wassermann-fast tabes" and its relation to general paresis the dictum of Charles Darwin: *Natura non fecit Saltus*, which is borne out by the clinical course of this type of locomotor ataxia. In the twelve cases of the "Wassermann-fast" type observed by me, nine patients developed full-fledged taboparesis and three died shortly after the paretic signs manifested themselves. To cite a few cases:

CASE 1.—Mr. H. S., aged 44, married; no children; lues eighteen years ago; shooting pains; girdle crises; Argyll Robertson pupils; Romberg phenomenon; no mental symptoms. Serology before treatment, positive Wassermann reaction in serum and fluid; excess of globulin; 60 lymphocytes per cubic millimeter; prompt reduction of Fehling's solution.

CASE 2.—Mr. Sp., aged 52, married; wife had four miscarriages. Lues at 20; markedly ataxic; girdle crises; Argyll Robertson pupils. Serology before treatment, positive Wassermann reaction in serum, same in fluid; slight excess of globulin; 36 lymphocytes per cubic millimeter; normal reduction of Fehling's solution.

TABLE 2.—RESULT OF TEST IN TABOPARESIS, CASE 2*

Treatment	Serology Performed	Serum W. R.	Cerebrospinal Fluid Analysis		
			W. R.	Glob.	Lymphoc.
0.6 salvarsan intraven.	2 weeks after therapy	+	+	+	33
1 week later the same	3 days after therapy	+	+	+	26
10 days later 914	One week after therapy	+	—	—	21
1 day later 914	3 days after therapy	+	—	—	21
1 week after 914 intraven.	One week after therapy	+	—	—	16

* Reduction of Fehling's solution normal throughout.

REPORT OF CASES

The treatment given these patients by no means represents the most active specific therapy that could be employed. The reason for this was the discouragingly rapid decline in the general health of the patients. The first one of the two died two months after the last treatment. The second patient developed taboparesis one year after the last treatment and died in a paretic decline.

These cases of tabes represent the absolute "Wassermann-fast" variety of the disease. It is sometimes, however, possible to obtain a weakly positive result after very vigorous treatment, and on very rare occasions even a complete negative Wassermann. The latter, however, does not remain negative for a long time but may return to positive a week or two after the last negative analysis. These are only relatively fast tabetics whose Wassermann reaction sooner or later will reassume its absolute fast nature, initiating in the course of time the clinical signs of taboparesis. Time will tell whether salvarsan or any other as yet undiscovered remedy used in large and frequently repeated doses will ever tend to ward off the approach of an impending taboparesis in a tabetic; at present it seems that frequently repeated small doses of neosalvarsan produce very encouraging changes in the psychic manifestations of the disease. In my opinion a patient with tabes who presents an absolute or even a relative "Wassermann-fast" tendency should be given the benefit of this treatment with small doses (0.3 gm. of neosalvarsan) every third or fourth day. I do not think that the Wassermann will be influenced at all, or at most an absolute fast condition could be made a relatively fast one. In fully developed general paresis one encounters the absolute "Wassermann-fast" condition more often than in any other syphilitic disease of the nervous system, and as the serology of a tabetic inclines toward assuming the "Wassermann-fast" tendency, it is my opinion that the clinician should be on the lookout for clinical evidences of an approaching taboparesis.

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Physiology and Dietetics.—"The teaching of physiology on the subject of diet must be tested carefully by the light of clinical experience."—David L. Edsall, in *Clin. Jour.*

AN EXPERIMENTAL AND CLINICAL STUDY OF INTERNAL HYDROCEPHALUS *

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Numerous methods have been suggested for the treatment of internal hydrocephalus, none of which have been productive of satisfactory results. So long as the etiology of this condition remains obscure, the treatment must necessarily be only symptomatic. In the hope of clarifying its etiology and thus affording a rational working basis for its relief, we have undertaken this investigation.

The present communication, which is presented as a preliminary report, includes observations on dogs after the production of experimental hydrocephalus, together with observations on patients suffering from the disease. We have also considered the manner and the place of formation and of absorption of the normal cerebrospinal fluid and the relation of these factors in the production of this pathologic condition.

HYDROCEPHALUS EXPERIMENTALLY PRODUCED

From a survey of the literature we have been unable to find any record of hydrocephalus having been produced experimentally. In our experiments an obstruction has been placed in the aqueduct of Sylvius, and thus the only way of exit for the cerebrospinal fluid from the third and the lateral ventricles has been occluded. An internal hydrocephalus has invariably resulted. The following is the procedure:

A bilateral suboccipital decompression is made through an occipital midline incision. After exposure of the cerebellum it is retracted upward, and the foramen of Magendie carefully enlarged by incising the membrane joining the cerebellum and medulla. A piece of cotton in a small gelatin capsule, placed on the end of a graduated carrier, is inserted through this enlarged foramen of Magendie and gently passed along the floor of the fourth ventricle into the aqueduct of Sylvius, where it is deposited by withdrawal of the carrier. The symptoms which are observed following the operation are principally lethargy and vomiting (general pressure symptoms) dating from the time of operation. When carefully performed there are no irritative or destructive symptoms from the operation. This hydrocephalus therefore is due to a purely mechanical obstruction in the aqueduct, as there is no interference with the veins of Galen.

Since the venous obstruction is considered a possible cause of hydrocephalus, a series of experiments was conducted in which the vein of Galen and the straight sinus were ligated. In none of these cases did hydrocephalus result.

ABSORPTION OF THE CEREBROSPINAL FLUID

There are many theories concerning the place and manner of the absorption of cerebrospinal fluid. In the study of absorption in the experimental and clinical work we have used almost exclusively phenolsulphonephthalein. This inert colored solution, first introduced into practical medicine as a renal test by Rowntree and Geraghty, has since been shown to be an accurate index of fluid absorption when the renal function is normal. It is very stable, is excreted in the urine with great rapidity, is easily detected in minute traces and is readily adapted to accurate quantitative estimation.[1]

Since an internal hydrocephalus can be experimentally produced by occluding the aqueduct of Sylvius, it is evident that absorption of fluid from the ventricles is less rapid than its production. In the studies of the absorption from the ventricles of patients with an internal hydrocephalus due to obstruction in the aqueduct, after the introduction of phenolsulphonephthalein in the lateral ventricles, there is excreted in the urine from 0.25 to 1 per cent. during a period of two hours; but when it is injected into the subarachnoid space of the same patient there is an excretion of from 35 to 60 per cent. in the urine in the same period of time. This demonstrates that the absorption of cerebrospinal fluid takes place almost entirely in the subarachnoid space.

It is evident that the fluid must be absorbed either into the blood or lymph-vessels. When phenolsulphonephthalein or other inert colored solutions are injected into the subarachnoid space, they appear in the lymph of the thoracic and right lymphatic ducts only after an interval of from thirty to fifty minutes, and only a faint trace is present even after two hours, whereas, they appear in the blood in three minutes and in the urine in six minutes and, as mentioned above, from 35 to 60 per cent. is excreted in the urine at the end of two hours. These facts indicate that the cerebrospinal fluid passes directly *into the blood and that the lymph-vessels* are not concerned in its absorption. There are three principal views regarding the manner in which the cerebrospinal fluid passes into the blood: (1) by means of stomata arranged along the venous sinuses; (2) through the pacchionian granulations, and (3) by a general process of osmosis.

When a suspension of fine granules is injected into the subarachnoid space the granules do not pass into the blood except in very minute quantities and after a long interval of time. Consequently the assumption of special openings (stomata) from the subarachnoid space into the venous sinuses seems unlikely. This applies to granules injected into the subarachnoid space under normal conditions of pressure. If pressure is used, especially on young tissues, foreign materials can easily be forced into the veins. In adult animals this requires a very high pressure. It should be noted that stomata were formerly believed to exist in the peritoneum to explain the absorption from this cavity, but this has been shown not to be the case.

That the pacchionian granulations do not play any special rôle in absorption can, we think, also be shown. These granulations are absent in many species of animals, are always variable in number and size and develop principally in adult life. After fine granules are injected into the subarachnoid space, local collections are deposited along the sinuses—especially the superior longitudinal sinus—in the interstices of the fibrous meshwork which forms the walls of the sinuses. These deposits are in all essentials similar to those in the pacchionian granulations. There is always a layer of dura and arachnoid separating these masses of granules from the blood in the veins. This is a much greater mechanical barrier to absorption than is present in the exposed capillaries of the pia-arachnoid.

After the injection of phenolsulphonephthalein into the spinal subarachnoid space (the communication with the cerebral subarachnoid space being closed), there is found to be a quantitative absorption proportionately as great as from the entire subarachnoid space. This shows that the absorption from the spinal subarachnoid space is similar to that from the cerebral. It is obvious, therefore, that cerebrospinal fluid is absorbed by a diffuse process from the entire subarachnoid space and is not restricted to any special locality, as, for instance, the region of the venous sinuses or the pacchionian granulations. From the foregoing observations, absorption from the subarachnoid space appears to be very similar to that from the pleural and peritoneal cavities, though it is somewhat less rapid.

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* From the Departments of Surgery and Pediatrics of the Johns Hopkins University.

[1] It should be emphasized, however, that ordinary solutions of phenolsulphonephthalein are made up in alkali, which is sufficient to militate against its use in the central nervous system. To overcome this defect we use a neutral solution specially prepared for us by Hynson, Westcott & Co.

FORMATION OF THE CEREBROSPINAL FLUID

It has long been known that there is an active formation of cerebrospinal fluid as evidenced by the rapidity with which the fluid reforms after it has been withdrawn either by lumbar or ventricular puncture. The endowment of the chorioid plexus with an elaborate blood-supply indicates that it is a structure with a special function. Since the work of Faivre (1854) and Luschka (1855) showing the secretory character of the cells, the chorioid plexuses have been regarded as glands, from which at least part of the cerebrospinal fluid is formed. The discovery of secretory granules by *intra-vitam* staining by Francini, and also by Bibergeil and Levaditi, leaves but little doubt as to the secretory nature of this function.

We have shown that practically no absorption takes place in the ventricles, at least under the pressure from an abnormal accumulation of fluid. Since this is true and since hydrocephalus results from an experimental block in the aqueduct of Sylvius, it is evident that the fluid forms in the ventricles. These facts demonstrate an irreciprocal permeability of the fluid-forming structures, and emphasizes the secretory rather than the mechanical formation of the cerebrospinal fluid.

OBSERVATIONS ON PATIENTS WITH HYDROCEPHALUS

In these cases we have applied the phenolsulphonephthalein test in order to determine the amount of absorption from the ventricles, the amount of absorption from the subarachnoid spaces and whether or not there was free communication between the ventricles and the subarachnoid spaces. Subsequently the results of these tests have been compared with the pathologic findings. Phenolsulphonephthalein, as has been said before, is perfectly harmless, and when used for injection into the ventricles or subarachnoid spaces produces no reaction.

From observations made on patients without hydrocephalus it has been possible to establish a normal standard for the excretion of phthalein after its injection into one or the other of these cavities. In all cases the kidney function has been shown to be normal. When injected into the ventricles phenolsulphonephthalein normally appears in the urine in from ten to twelve minutes, and after two hours from 12 to 20 per cent. is excreted. After its injection into the subarachnoid space, it appears in the urine in from six to eight minutes, and from 35 to 60 per cent. is excreted in two hours.

When phenolsulphonephthalein is injected into the ventricles, it appears in the lumbar spinal fluid within two or three minutes. In hydrocephalus this becomes a most important test, for it enables one to determine accurately the patency or obstruction of the channels of exit from the ventricles to the subarachnoid space. Furthermore, fluid passes upward into the ventricles after the injection of phenolsulphonephthalein into the lumbar subarachnoid space.

By comparing the results of these tests with those obtained in hydrocephalus, we are enabled to establish two types of this disease. In the first type, after the injection of phenolsulphonephthalein into the ventricles, the time of its appearance in the urine is greatly delayed (from twenty to forty-five minutes) and the quantity excreted in two hours is practically negligible (from 0.25 to 1 per cent.). The excretion of phenolsulphonephthalein in this group after its injection into the subarachnoid space, however, is practically normal (time of appearance from six to eight minutes, quantity excreted in two hours from 35 to 60 per cent.). Furthermore, after the injection of phenolsulphonephthalein into the ventricles, it has not, in the cases observed, appeared in the spinal fluid. In this group, we have found at necropsy an obstruction to the passage of cerebrospinal fluid from the ventricles to the subarachnoid space. In two cases there was a congenital closure of the aqueduct of Sylvius, a third showed old adhesions obliterating the basal foramina of Magendie and Luschka, and in the fourth these foramina were closed by a thick tuberculous exudate which completely covered the base of the brain.

In the second type the excretion of phenolsulphonephthalein after its injection into the subarachnoid space is greatly diminished (from 8 to 15 per cent.), and the appearance time delayed (from twenty to thirty minutes). The amount excreted after its injection into the ventricles likewise is greatly diminished, undoubtedly due to the low subarachnoid absorption. In contradistinction to the first type the communication between the ventricles and the subarachnoid space is open. This is shown by the prompt (from two to three minutes) appearance in the spinal fluid of phenolsulphonephthalein after its injection into the ventricles. We have had the opportunity of examining two patients of this type, but as yet have made no pathologic observations. In both there has been an antecedent history of meningitis, one of which was due to the meningococcus.

These two types of hydrocephalus may be readily differentiated by determining the patency or occlusion of the channels of exit from the ventricles. In Type 1 these channels are obstructed and hydrocephalus results because there is no absorption from the ventricles. In Type 2 the channels are patent and hydrocephalus is due to the diminished absorption from the subarachnoid space.

It is a pleasure to express our gratitude to Professors Halsted, Howland and Cushing for suggestions during the course of the work, and for the opportunity of carrying out these investigations.

SOME RECENT CONCLUSIONS ON ABDOMINAL ROENTGEN-RAY WORK

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At present the Roentgen-ray bismuth method of diagnosing conditions of the alimentary canal is generally utilized. Since the work of Holzknecht was advanced, roentgenologists, and following them, surgeons and internists, have been accepting various reports as diagnostic. During the present winter I have checked up my Roentgen-ray findings with those of the laboratory and those noted at operation, and a few of the facts of the Roentgen-ray method of examination alone seem worthy of presentation.

After a trial with several methods, I find that plugging the cardia so as to retain the bismuth in the esophagus and then making stereoscopic plates of the esophagus while the patient is in the standing position is the best means of diagnosing new growth of the esophagus before marked stenosis exists. This is true of studies of the gullet itself and also of extra-esophageal conditions. The second method that answered to good purpose was giving the bismuth salt in about 25 gm. quantities suspended in two ounces of syrup of acacia. This makes about four swallows and thickly coats the interior of the gullet, giving fairly sharp shadows for studying the course of the canal as well as its rugae and for gaining an idea of the structure when viewed fluoroscopically.

In the study of motility and exit from the stomach in 203 cases of distinct gastroptosia, in which hourly x-ray observations were made, the conclusion was plain that the x-ray method of diagnosing stasis in the stomach is not as practical as the test-meal method. One hundred and twenty-six of these cases examined by the bismuth x-ray method showed delay of exit of six hours or more, while only thirty-one showed the delay by the test-meal method. In some instances the bismuth x-ray method showed a delay of nine hours or more, when the test-meal method showed a normal evacuation. Instances were encountered in which bismuth was present in the stomach as late as eighteen hours after ingestion, while the stomach on a mixed meal was empty in four and one-half hours. Further, in many cases, apparently from one-fourth to one-half of the amount of bismuth ingested was present in the stomach six hours afterward, and the studies of the pylorus and of the motility as seen in the plates and the test-meal findings showed the exit as well as the course of bismuth to the ileocecal region to be normal. It is apparent, whatever has been advanced to the contrary, that the method of examination by food extraction is decidedly more to be depended on in gaining an idea of exit from the stomach than is the bismuth x-ray method, for it was strongly suggested that foods pass from the stomach in decidedly less time than will bismuth or any other form of metal salts used to throw a shadow, probably because of the pulverized salts adhering to the mucosa. Studies were made by giving the bismuth suspension after a mixed meal hoping that the meal would cause a normal exit of the bismuth, but it was found in a number of instances that the bismuth caused a delay in the exit of the food; and, if the bismuth was given before the food was taken, the delay of the bismuth was more marked in that it even held the food back somewhat.

Those cases in which a rectal injection of bismuth, to outline the colon, and bismuth by mouth were given at the same time showed, in hourly studies of the stomach afterward, that the bismuth in the colon caused some retention of the bismuth in the stomach, and it therefore seemed unwise to continue the procedure of noting both the colon and stomach at the same time.

It was plain in some of the gastroptosis and splanchnoptosis cases that the method of estimating the rate of transit through the intestine to the ileocecal valve to be six hours, and the time for its accumulation in the descending colon, sigmoid and rectum to be twenty-four hours, should be modified. Seven of the cases in which the bismuth was localized in the cecum and proximal transverse colon at the end of the twenty-four hours showed no diseased condition in the colon other than atony and neuromuscular dilatation. From the plates of these cases the belief seemed warranted that the rectal-injection method for outlining the colon and studying its anatomy is better than the method by mouth in which the making of observations at intervals of six hours or more to note the transit of the bismuth is used. That is, in so far as the colon is concerned, upward transit of bismuth is generally a better means of studying the motility and stricture than is the use of bismuth from above, although an occasional case could be diagnosed by the descending instead of the ascending bismuth.

The winter added three cases in which ulcer was seen pitted with the bismuth. Against these three, twenty-seven were diagnosed as gastric or duodenal ulcer, gastric ulcer being found twelve times. Of the fifteen remaining all were duodenal ulcers but one, which was a mass of adhesions in which a cause could not be figured out satisfactorily. In two of the duodenal ulcers, gastric ulcer was also present, and in one of the gastric a duodenal ulcer was found. The twenty-seven patients were all operated on, those not operated on not being reported. In the cases of duodenal ulcer the diagnosis was best made by the history and the laboratory methods rather than by the x-ray method, which in my experience was too fallacious for accurate diagnostic deduction.

Carcinoma of the stomach was best diagnosed by the x-ray method, for by it four cases were diagnosed early enough for complete excision and expectation of a cure; in none of these was the history, test-meal or other laboratory methods of so much value. In the late cases either or any combination of methods sufficed.

Adhesions of the colon were best diagnosed by the x-ray method, there being no laboratory findings to take its place. An occasional case of gall-bladder adhesions was diagnosed by x-ray, but this method could not be depended on as could the history, examination and an occasional suggestive test-meal leading to the diagnosis of cholelithiasis or chronic cholecystitis. In chronic appendicitis the x-ray was almost valueless, the history and examination methods still being the best. Lane kinks were so commonly met with when taking x-rays in the Trendelenburg position that it is now doubtful to me that they have the surgical significance Mr. Lane placed on them. In only nine of the 167 cases in which they were noted could they be proved to be factors in causing delay at their site or above it in the stomach. Further, in the 200 or more laparotomies which I attended during the winter in which Lane kinks were searched for, the characteristic kinks were present in at least 90 per cent.; the same was true of the lesser number of necropsies performed.

Four cases of renal stone were encountered in which the renal calculus was not suspected from the history; in most cases in which this condition was suspected from the history and urine findings, renal stone shadows were seen in the kidney substance, pelvis, or ureters. When in the latter, all of them showed the stoppage of the transit of the stone at the brim of the pelvis or just short of the bladder. One case in a series of plates showed definitely what looked like a calculus in the pancreatic duct; operation proved it to be a calcified gland outside of and near the head of the pancreas.

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THE TREATMENT OF PARALYSIS OF ANTERIOR POLIOMYELITIS

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Laymen, and some members of the profession, accept a statement made by Dr. Simon Flexner of the Rockefeller Institute, New York City, that no treatment is available at the present time for anterior poliomyelitis, as referring to the subsequent paralysis, whereas, Dr. Flexner is referring to the inflammation in the cord. It has been the means of deterring parents from making an effort toward treating the paralysis occurring in their children. What Dr. Flexner wished to convey in his remarks was that as yet nothing was known to arrest the inflammation in the cord and prevent the paralysis occurring before paralysis appears.

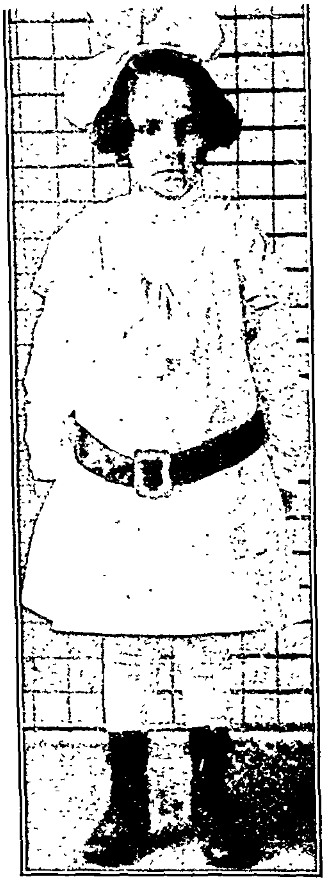

Fig. 1.—Case 1. Perfect recovery after treatment by high-frequency current, massage and muscle education.

What can we do to bring about the best return of function in the muscles affected by the paralysis? What should treatment consist of? The treatment herein presented consists of the use of electricity, massage, hydrotherapeutics and muscle education, in which there is a mental concentration to guide the muscle effort.

Space will not permit of the description of splints either for prevention of deformity or aiding motion.

ELECTRIC TREATMENT

After an extended review of medical literature, I have failed to find any detailed descriptive method of the use of electricity and massage in infantile paralysis, so I shall describe what I consider to yield the best results. When should electric treatment begin, and what form of current should we use? Many writers advise waiting from four to six weeks after the temperature becomes normal before doing anything in the way of treatment. According to the rules of the department of health of the city of New York, six weeks' quarantine is required. I have found that we obtain the best results by beginning when paralysis appears and even before the temperature is normal.

I have found, in the application of the Oudin or high-frequency current in cases of obliterating endarteritis, that the skin became blanched and remained so for several minutes, showing that the primary effect of the high-frequency is a contraction of the blood-vessels. With this effect in view, hoping to reduce the blood- and serum-compression on the nerve-cells in the spinal cord, I have, in the first few days of the paralysis, applied this current along the spinal column and feel positive that I have relieved the compression in the cord and hastened recovery.

Through the experiment of the United States government physicians in the Philippines, we have discovered that the high-frequency current materially destroys bacteria in water and also destroys their toxins. Hence we may conclude that it has a beneficial effect on the inflammation in the cord, in addition to its mechanical contraction of the blood- and lymph-vessels. When the temperature is between 98.5 and 99.5 F. and in some cases in which high temperature continues for several weeks, I have not let this deter me from treating the patient.

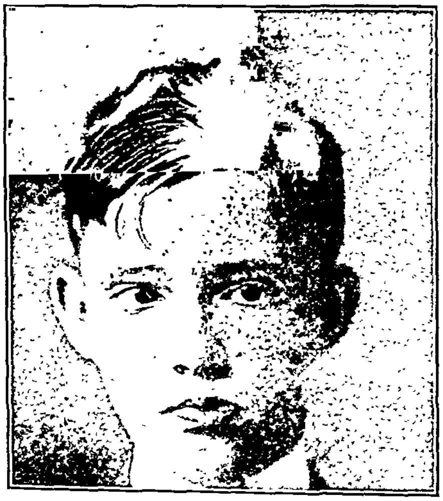

Fig. 2.—Case 2. Disease began at 1½ years; treatment, 14 years later; recovered function in face and arm in 6 months.

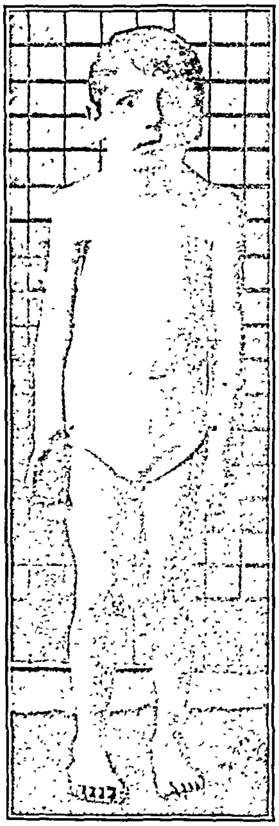

Fig. 3.—Case 3. Recovered function in arm and legs with treatment by electricity and massage, etc.

I give to the muscles involved a sinusoidal current, alternating with a combined galvanic and faradic current that contracts seventy-two times to a minute, synchronous with the heart-beat; and I regard this as an aid in the effect. It is known that contraction of the muscle can be obtained by means of an electric current when none can be obtained by the will; hence, this is a valuable means of retaining and developing the muscle fiber until it comes under the guidance of the mind.

Although many differences of opinion prevail as to the application of the sponge electrodes, I am in the habit of applying them at the origin and insertion of the muscle or muscle-groups involved, always laying stress on the importance of approximating the origin and insertion of the muscle as nearly as possible. For instance, in treating the peroneal group, these muscles being most frequently involved, one sponge is placed over the middle third of the outer side of the fibula, the foot flexed as much above a right angle as possible and the other sponge applied over the insertion of these muscles on the outer side of the foot. In this way, the bellies of the muscles are relaxed and a contraction is made more easily.

I believe that much foolish stress has been laid on the reaction of degeneration and I wish to prove, from a large practical experience, how deceptive it may be. It is said that a failure to obtain a muscle contraction by a galvanic or faradic current is an evidence of degeneration of the muscle fiber and that no improvement can be looked for in this paralyzed condition in the future. Do we fail to obtain a contraction in most cases? No! We find that the cutaneous surface will not tolerate the pain of the current and we must desist before contraction takes place, for most of the cases occur in children under 5 years of age, who see no reason for enduring the electrical pain. This is even true in other cases, when the age of the patient and his cutaneous tolerance are greater; the strong current may give no reaction and still reappearance of function may occur. Hoffa always cut down on the muscle to determine its character.

The strength of the currents used should be the weakest that will produce a contraction, and it is never to be used after contraction of the muscle ceases, nor longer than from two to three minutes on any particular muscle group, or from six to twelve minutes on the body at one seance. If this method is followed the child will not cry from pain, or have its nervous system upset by too long-continued electric treatment. I regret to state that the worst results seen by me have been in children of physicians who have had an excess of treatment; that is electricity given from one half an hour to an hour daily has inhibited the recovery and eaten up, as it were, all of Nature's element of repair.

Strychnin may be given internally or a solution used on a sponge and introduced locally, to increase the contraction of the muscle fibers.

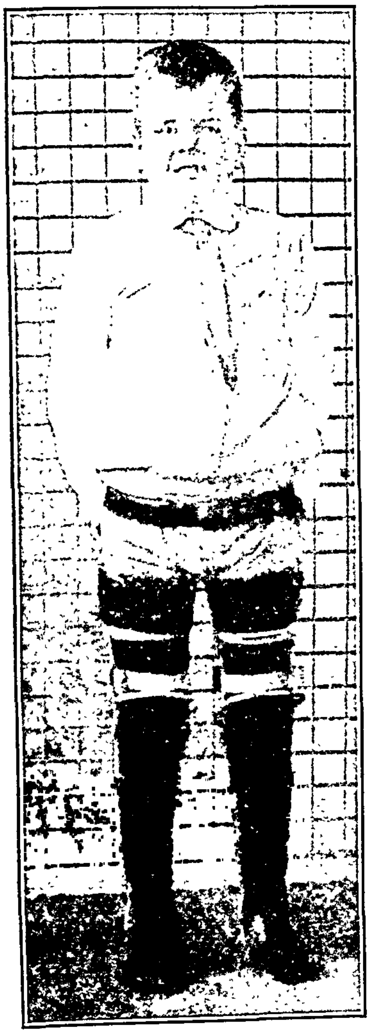

Fig. 4.—Case 4. After three months' treatment, able to stand alone with braces.

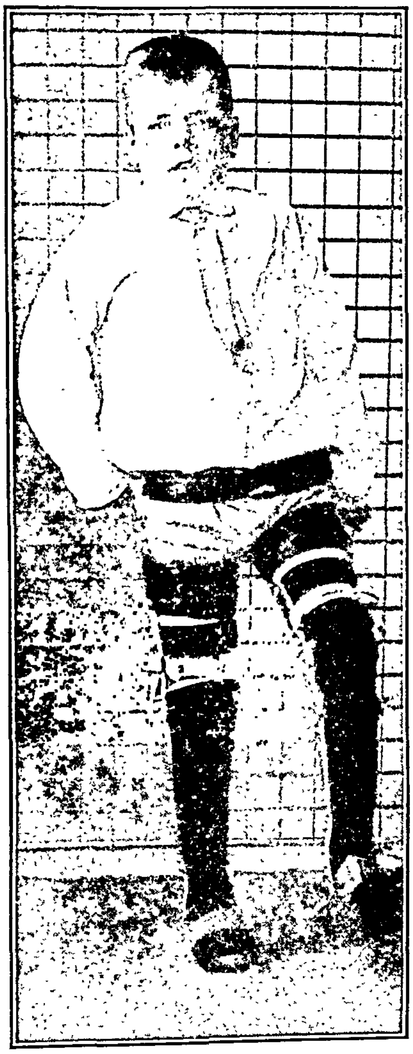

Fig. 5.—Case 4. Patient can lift leg at an equal angle or right angle.

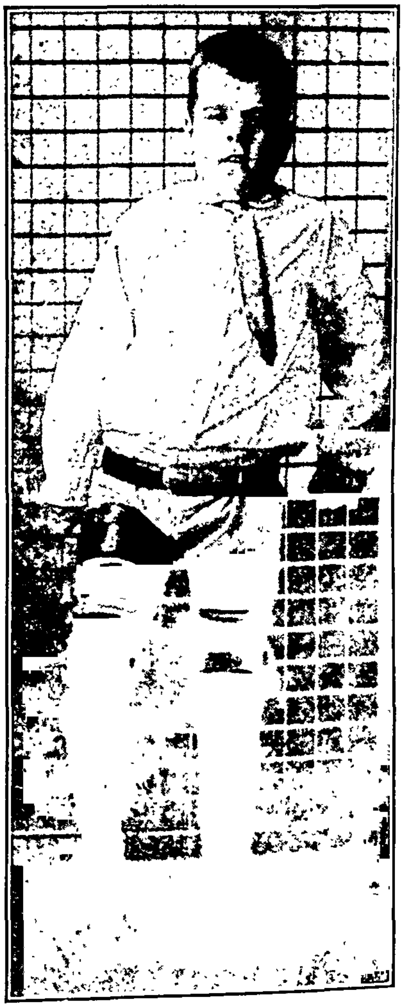

Fig. 6.—Case 4. Patient can lift right leg to right angle.

MASSAGE

Dr. Benjamin Lee[1] says: "In the essential paralysis of infancy, truly wonderful results are obtained by massage." Massage treatment should be entered on the moment the acute inflammatory symptoms have disappeared and be continued daily in the face of seeming absolute ineffectiveness, for weeks and even months. Cases in which no improvement can be detected for long periods often suddenly begin to improve and progress with great rapidity.

The effect of massage may be classified as follows: mechanical, reflex, thermal, electrical.

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[1] Lee, Benjamin: Hare's System of Practical Therapeutics, ii, p. 321.

1. The mechanical effects are by far the most important, but the others should not be overlooked or forgotten. They consist of the interchanging of cell contents under the influence of alternate pressure and relaxation; a quickened movement of the blood in the capillaries, especially in the muscular tissue; increased activity in the movement of the areolar fluid; acceleration of the currents of both blood and lymph in their respective channels.

2. The reflex or purely nervous effects of massage are obtained by light stroking and percussion. The former produces results which can only be explained on the supposition that it acts as a stimulant to the reflex system of nerves, the force used not being sufficient to account for any change on the mechanical theory.

3. The thermal effects of massage and movements are almost too apparent to need scientific demonstration; everyone is familiar with the fact that both muscular contraction in the form of ordinary exercise and simple friction develop bodily heat in a striking degree. Dr. Weir Mitchell, in his essay on "Fat, Blood and How to Obtain Them," notes (what has been observed by many others) that he has frequently seen the strangely cold limbs of children suffering with infantile paralysis gain from 6 to 10 degrees F. during the massage.

4. The electric effect of massage results partly from the development of the surface heat, partly from the surface friction, partly from the attrition of the muscular fibers and cells, and partly from the nerve stimulation and chemical action.

Graham observes that muscles give a much more ready, vigorous and agreeable response to the will and to the faradic current after massage than they did before.

A child suffering from infantile paralysis was introduced; the affected limb having a surface temperature of 70 F., the poles of a battery were applied to a limb, and 11 milliamperes were required to produce muscular contraction; the limb was then massaged and the temperature was found to have risen to 95 F.; the poles being applied at the same points, contractions followed the employment of only 5 milliamperes. It is evident, therefore, that massage diminishes the resistance of the tissues to the electrical current and increases the electrical contractibility of the muscles.

As some men prominent in orthopedics and neurology have condemned the use of electricity and massage, I have taken one of the most recent articles, as illustrative of this side of the subject; that is, Dr. Henry Ling Taylor[2] says: "The conventional treatment by electricity and massage is completely ineffectual." To support this position, he continues: "This was publicly acknowledged to Dr. Bernard Sachs of New York, a distinguished neurologist, etc., and chairman of the Collective Investigation Committee of the New York epidemic of 1907, at the Congress of American Physicians and Surgeons, at Washington, May 10, 1910. In these words he spoke of electricity and massage: 'I consider that the time given to massage and electricity, in these cases, is time wasted. I cannot see that these same methods do any definite good.'"

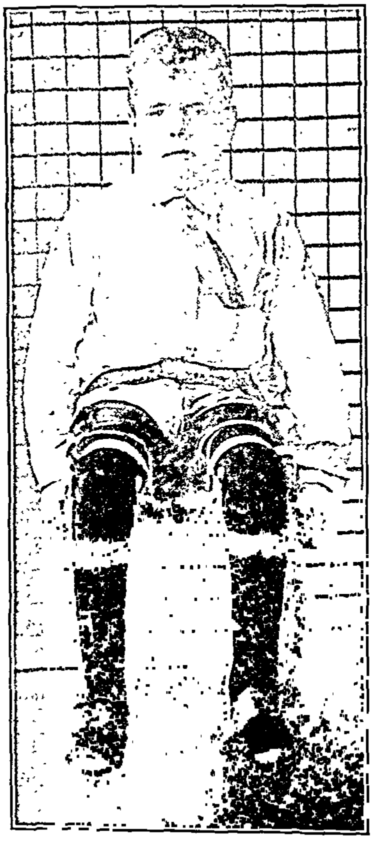

Fig. 7.—Case 4. Patient bearing weight on braces.

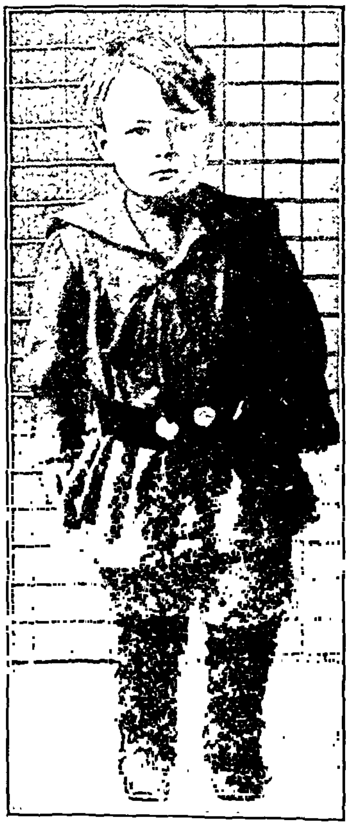

Fig. 8.—Case 5. After one year of massage, electricity and muscle education, patient is able to walk with almost normal gait.

It is true that Dr. Sachs made the preceding statement in May, 1910, as I was present at the time; but five months later, on Oct. 24, 1910, at the New York Academy of Medicine, Dr. Sachs,[3] in discussing this subject, spoke of electricity and massage in the highest terms, as he had previously done, thus showing that a man of the highest standing, from a later and more comprehensive knowledge of the subject, completely changed his views of the value of electricity and massage—a striking illustration of the old adage, "Wise men change their minds."

Dr. Taylor's unconscious accord with this view is shown on the next page in his own article, where he speaks in the highest terms of vibration (which is a simple mechanical massage) and active and passive movements (which have always been classed under Swedish massage).

The abuse of treatment is found in prolonged massage. Children who receive an hour or more treatment daily cannot improve in the face of such a physical tax. I have seen many cases in which the overtreatment has deterred the progress of recovery. Fifteen to twenty minutes is sufficient treatment to administer daily.

HYDROTHERAPEUTICS

The use of the bath, whereby we may float the limbs and aid motion, is a valuable adjunct in treatment. I wish to draw attention to the value of immersion of the affected limb in warm water from 95 F. *to* 102 F. for twenty minutes each night, in which we find that the

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[2] Taylor, Henry Ling: Med. Rec., Oct. 15, 1910, p. 660.

[3] Sachs, Bernard: Treatment from the Neurologist's Viewpoint, in a Symposium on the Treatment of Acute Anterior Poliomyelitis, THE JOURNAL A. M. A., Oct. 22, 1910, p. 1465.

62½-pound pressure of the water when removed to the atmospheric pressure of 15 pounds to the square inch results in a dilatation which, together with the heat absorbed, produces an effect on the trophic centers and improves the temperature and growth of the limb. The paralyzed limb retains this heat for hours.

MUSCLE EDUCATION

Finally, I wish to call attention to a class of active and passive exercises done before a mirror, having the patient concentrate his mind on the affected muscles. When the origin and insertion cannot be approximated by an effort of the will, the attendant aids in the effort.

After a time it is found that the motion may be brought under the control of the will. It is known that when motion is guided by mental concentration, the sulci in the gray convolution in the brain presiding over this motor area are increased, as well as the caliber of the nerve going from the cortex to the periphery. It has been demonstrated by Anderson, of Yale, and others, that when a person is securely placed on a body balance and concentrates his mind on an extremity, the hyperemia thus produced tips the body balance in the direction of this limb.

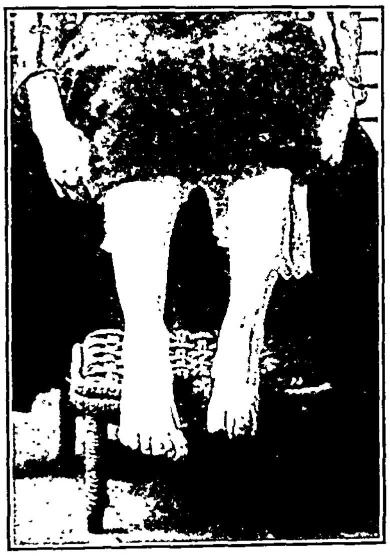


Fig. 9.—Case 6. Recovery after 20 years' daily treatment, massage and electricity by motion.

A moment's thought makes clear the fact that the nerve efficiency or nervous control as displayed by the gyrations of the nautch dancer can be developed by any person in any set of muscles if a proper effort is made for development of sufficient nerve force and nerve control. The stimulus transmitted from the brain to the periphery depends on the caliber of the conducting nerves, as the diameter of copper wire regulates the volume of electric current capable of transmission. We must now realize that the concentration of the mind on the muscular effort not only initiates the movement, but also determines blood to the controlling nerve centers, producing growth and development in the conducting filaments.

In this treatment of infantile paralysis, in addition to the application of massage, the treatment by the galvanic, faradic, sinusoidal, and high-frequency electrical current, in children over 3 years of age, a course of muscle education before a mirror is added, which I regard as one of the most important in its treatment, because recovery is best brought about by the action of the will, influencing action after massage and electricity have brought the muscle under the control of the mind.

The muscles most frequently involved in infantile paralysis are the peroneal group, and the plan of exercising one set of muscles can be utilized in another set of muscles involved. Placing the child in a chair before a mirror in a comfortable position, I first approximate the origin insertion of this muscle group by bringing the foot up to a right angle with the leg, and then urge the child to aid in bringing up the little-toe side of the foot through an arc of about 30 degrees. If the muscle contraction is such that the child cannot do this alone, the instructor places one hand on the knee to keep the leg in the position, and places the other hand under the foot, which greatly aids the efforts of the child in producing the required contraction. This should be repeated several times, but not to the point of overtiring these weakened muscles. Each set of muscles should be contracted in a similar manner. If the motion cannot be brought about, still the mental effort should be made for the attainment of this action.

Figs. 10 and 11.—Case 7. Result of severe attack of infantile paralysis.

To realize how efficient this method is, I wish to state that through this, combined with other treatment, I have been able to show at medical meetings some forty-three patients practically cured, who were unable to walk for periods extending from nine months to four years, having received some form of treatment during this time by other physicians, and having been referred to the Hospital for Deformities and Joint Diseases by such able observers as Kerley, Koplik, Mandl and many others.

It has been learned from necropsy that when areas in the brain have been destroyed by tumor or cysts, the function for this area has continued, and by the decussation of the nerves other areas in the brain have taken up the function. I am of the opinion that in cases in which recovery has taken place in paralysis, after a few years, the motor conduction from the brain to the periphery has been conducted through other motor tracts in a new circuit, passing around the damaged area in the cord.

REPORTS OF CASES

CASE 1.—Gertrude G., aged 6, normal delivery; previous history not pertinent. I was called by Dr. Brainglass to confirm his diagnosis of infantile paralysis on June 13, 1910. Sister of the patient had also had the disease. When I saw this child both legs were involved; the paralysis extended up the spine, and seemed to be of the progressive type. Hoping to stay the advance of the paralysis and expedite a recovery, having explained to the doctor the benefit I hoped to obtain by the d'Arsonval current, and receiving the concurrence of the family, I had the child removed to the Hospital for Deformities and Joint Diseases, where, after the first two days' treatment with high-frequency current along the spine, a marked improvement in the child's condition was shown. This treatment was kept up and combined with the other treatment of massage and electricity as herein described.

The child has made an almost perfect recovery; can bear her weight and hop on either leg, and walks with a normal gait. Several other patients have been thus treated.

The following case is shown to correct two long-standing fallacies: one, that no improvement will occur, whether spontaneous or under treatment, after one year; the other, that after failure to react to either the galvanic or faradic current, known as the reaction of degeneration, no improvement can be looked for.

CASE 2.—Frank S., boy, aged 16, when 1½ years old had an attack of infantile paralysis involving his face and right arm. Fourteen years after this attack he appeared at the hospital hoping to receive treatment that would improve the condition of his face. The right side of his face was paralyzed, and he could not close his right eye in the least. He was turned over to Dr. Charles Rosenheck, who had had five years' experience at the Roosevelt Hospital Dispensary, under Dr. Starr (department of neurologic diseases), and who reported to me that he was satisfied that his reaction of degeneration was such as to be beyond all hope of the slightest benefit. I requested the other members of the staff to confirm this condition, as I wished to see if, after the lapse of fourteen years, with a positive reaction of degeneration, any improvement could take place. The improvement was so great after being under constant treatment for six months (the boy being able to close eye and produce wrinkles in his forehead, with a return to the normal outline of the affected side of his face) that he was shown at the pediatric, neurologic and orthopedic sections of the Academy of Medicine of New York City.

Many other similar cases have been encountered.

CASE 3.—This patient was referred to the hospital by Dr. Koplik, seven months after initial paralysis. When admitted, all the muscles were flaccid; child had no use of arms or legs; all muscles of respiration, including diaphragm and muscles of neck, were involved.

Under massage and electricity, the muscles of both legs have regained their normal function; nearly all function has returned to the left arm; function of the right deltoid is absent, but the trapezius and flexors of the hand have regained their function. There has been some atrophy of the pectorals and apparently some of the intercostal muscles, as shown in the picture.

When the child was admitted to the hospital we looked forward to obtain a necropsy. The extreme condition of this child makes the amount of recovery almost remarkable.

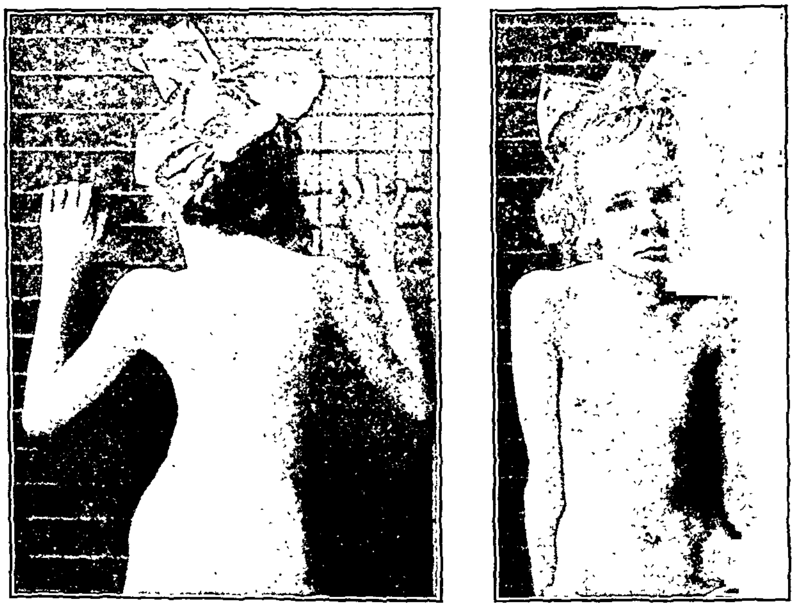
The following case represents a type of recovery partial in the one leg, with promise of a flail leg in the other:

CASE 4.—Paul E. was seen in consultation and referred by Dr. Charles G. Kerley on Oct. 16, 1910. No spontaneous resolution had taken place in the right leg, and apparently from his muscular condition he gave no promise of improvement, while the other leg had very little ability to perform the normal motions, much less bear his weight.

The child had been ill since the end of July, 1910, with no spontaneous resolution; very little was looked for in the way of improvement. With Dr. Kerley's concurrence, the patient was removed to the hospital. As shown in the picture, after three months' treatment, he is able to stand alone in braces; is able to lift both limbs, at an equal or right angle; bear the additional weight of the braces, and I am looking for progressive improvement.

CASE 5.—Arthur H., after initial attack, received four months' treatment at one clinic, eight months' treatment at another clinic, and on going to the third clinic, an operation for fixing the foot and ankle was suggested, as apparently there was extensive atrophy and no function.

At that time the patient's mother met the mother of another patient, who had had her child for treatment at the second institution for three years, with no ability to stand or walk, and who informed Mrs. H. that under treatment at the Hospital for Deformities and Joint Diseases for five months the child was able to walk without braces. Mrs. H., regarding this as an absurdity, made a special visit to this child's home, and seeing what she regarded as a miracle, brought her own child to the hospital.



Figs. 12 and 13.—Case 7, showing improvement after one year's treatment. Treatment by traction on extremities and head with daily electricity and massage to muscles.

This child was under treatment for seven months before he gained any promise of bearing his weight on his right leg, and after one year he is able to walk with almost normal gait.

The following case is shown to illustrate how massage and electricity, carried out by the parents alone, has won success, when many prominent physicians, who were consulted from time to time, made the darkest prognosis, with no promise of the use of either limb:

CASE 6.—Olive B., when 1½ years of age had an attack of infantile paralysis, with both limbs involved; patient was not able to bear her weight on either limb for two years. During this time, various physicians were consulted, and the mother was told that the case was hopeless. At the advice of an old physician, the mother herself purchased a battery and gave the child massage and electricity. At a later time, braces were ordered by institutions and applied, but as the mother thought that this did not aid in the recovery, they were discarded.

Nevertheless, the mother proceeded in the massage and electricity, keeping up the treatment almost daily for twenty years. The girl is now 24 years of age, has no difference in the length of her legs, but the right foot is 1½ inches shorter than the left. She is just recovering from a corrective operation on this right foot.

I am particularly pleased to demonstrate through this case how much can be done through the affectionate perseverance of a parent, recognizing the improvement derived from the treatment, in opposition to the advice of many physicians that she consulted, also the advice she received in a number of institutions.

Case 7.—M. T., referred to the hospital by Dr. Reginald H. Sayre, who took the original photographs, suffered from a severe attack of infantile paralysis in the epidemic of 1907. The original diagnosis, from pain, was regarded as one of rheumatism, and this diagnosis was confirmed by consultants. Her total paralysis was not noticed until two weeks after the original attack. After six months she was referred to an orthopedic specialist and she journeyed from Yonkers to New York once a week to receive treatment, which consisted of electricity. The journey back and forth completely exhausted her for twenty-four hours.

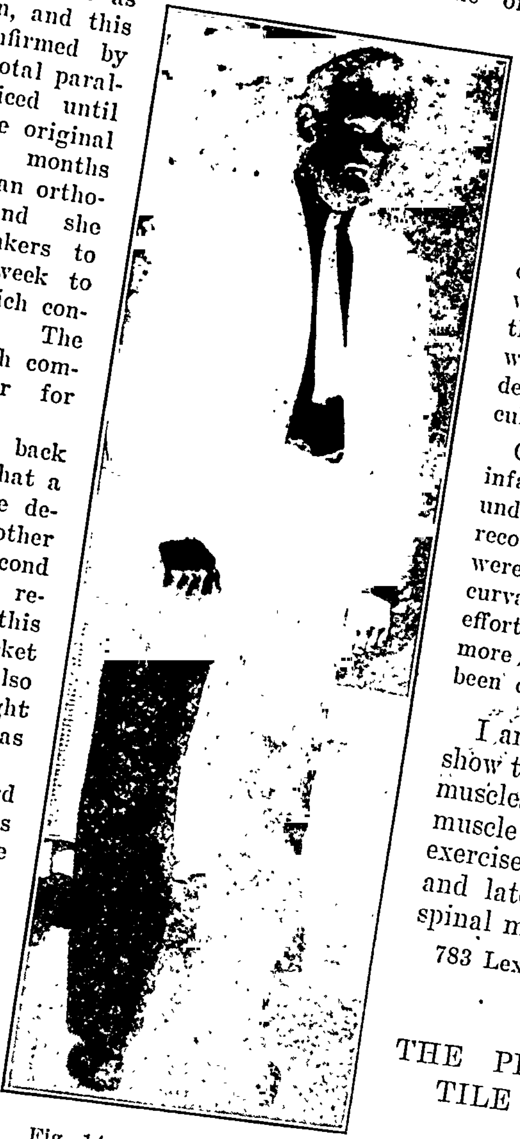


Fig. 14.—Case 8. Total paralysis 1½ years; recovery after 6 months' treatment with electricity, massage, etc.

The curvature in her back became so pronounced that a brace was applied. The deformity progressing, another consultation with a second orthopedic surgeon was requested. As a result of this consultation a Calot jacket was applied; she was also wearing a brace on her right foot. No improvement was noticed.

Consultation with a third orthopedist was sought. This orthopedist endorsed the treatment as conducted.

In September, 1909, she was seen in consultation by Dr. R. H. Sayre. Her condition then is shown in Figures 10 and 11. Since her case was regarded as one that should receive aggressive treatment, she was turned over to me, at the hospital, where for three months traction was made on her extremities and head, with daily electricity and massage to her weakened muscles. This was followed by a plaster jacket and jury-mast.

Photographs taken one year later, as shown in Figures 12 and 13, show marked improvement, also demonstrate the fact, not accepted by many orthopedists, that in rotary lateral curvature, with bony deformity, much improvement can take place. A line drawn from the left nipple in the front, or from the angle of the scapula in the back, or following the crease of buttocks up, will bring out the change that has taken place.

Since these photographs have been taken, the patient has made decided improvement, but objects to having another photograph taken.

Case 8.—John D. R.: After a total paralysis lasting one and a half years, under the methods herein described, the patient obtained control of his legs and arms and is now able to get about, after four months' treatment.

Case 9.—George and Richard C., brothers, were afflicted with infantile paralysis during the summer of 1911 while in an isolated home at Glen Summit in the Pennsylvania mountains. The cases were referred to me by Dr. Charles Gilmore Kerley of New York. Richard, having a milder attack, made almost perfect recovery except the anterior and posterior tibialis, and peroneal in one leg. George had paralysis involving all the muscles of his body, and including thorax and vocal cords. One could distinguish his voice only by placing the ear to his mouth.

I am simply reporting this case to show that treatment continued for several years will bring about progressive improvement, for since the paralysis, the patient has gradually regained control of one group of muscles after the other, and although he still has light braces to aid his leg motions, he is able to go about without them.

The case also demonstrates the danger of permitting nurses and others not familiar with the care of these cases and the value of confining their efforts to the weaker muscles, to instruct the patient in the general setting-up exercises. For a period of over two years, George gave no evidence of spinal curvature or rotation. The case was turned over to a nurse who devoted her efforts to develop both sides, with the results that the stronger side was developed so much quicker than the weaker side that after a period of a few months a very decided lateral curvature was developed, which it will be difficult to correct.

Case 10.—Harry H., patient of Dr. Eagen of Brooklyn, had infantile paralysis involving all the muscles of the body, and under treatment of massage and electricity, made a perfect recovery of his arms and legs. His erector spinae muscles were so extensively involved that a right high dorsal lateral curvature developed. Under special care by devoting all the efforts to the weaker muscles, by electricity, massage and more particularly muscle education, this lateral curvature has been corrected.

I am simply calling attention to the preceding case to show that when all efforts are directed toward the weaker muscles and the stronger ones are allowed to atrophy, a muscle balance can be developed, but when bilateral exercises are attempted we have deformity in the limbs and lateral curvature develops in cases in which the spinal muscles are involved.

783 Lexington Avenue.

THE PRACTICAL IMPORTANCE OF INFANTILE KIDNEY IN RENAL DIAGNOSIS *

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AND
H. W. PLAGGEMEYER, M.D.,
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The different varieties of kidney anomalies have been so thoroughly catalogued, and the classification so often repeated by various authorities, that the profession has come to be more or less conversant with their existence.

We wish to describe here a type of kidney not usually included in these classifications, which, when present, is of vital importance to the surgeon, as it may easily pass unrecognized if ordinary methods of examination are used. The particular anomaly to which we refer is the condition in which a large, hypertrophied kidney exists on one side and an infantile kidney on the other, the

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* From the Genito-Urinary clinic of the Johns Hopkins Hospital.

urine from the deficient kidney, with all chemical and microscopic methods of diagnosis, appearing entirely normal. The concentrating power of the kidney is also normal. The quantity of urine secreted, however, is so small and the function so decreased, that this kidney alone may be insufficient for life. On examination, the kidney is normal in shape, color and consistency. On section, the general architecture is normal and microscopic examination shows normal tubules and glomeruli. It differs from the normal kidney in its diminutive size only. While a search of the literature reveals a comparatively small number of cases in which nephrectomy has been performed unwittingly on the larger kidney with disastrous results, the condition is, nevertheless, probably much more common than the number of reported cases would indicate.

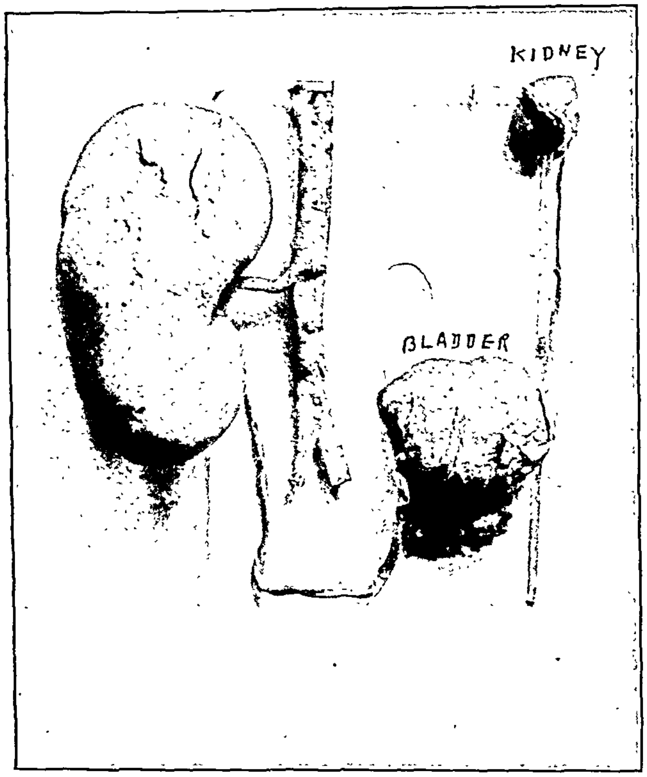

Fig. 1.—This kidney is an example of hypoplasia and the picture is inserted to show the contrast between hypoplasia and the infantile type.

Papin, in a very complete consideration of all possible kidney malformations, mentions briefly the type of organ to which reference is here made. He describes such an organ as secreting a urine, normal in every respect, except that the amount is very small. He mentions specifically that such a kidney may even have a high urea concentration. L. L. McArthur[1] reports a case in which he had performed nephrectomy for tuberculosis, which was followed by death from renal insufficiency and at necropsy a kidney, which he terms "infantile," was discovered. The ureters in this case had been catheterized previously and a perfectly clear, apparently normal urine obtained from the insufficient kidney. He also expresses the evident hopelessness of being able to diagnose this condition before operation.

The frequency in general of kidneys atrophic through various causes is seen from a study of 3,940 necropsies from the pathologic department of the Johns Hopkins Hospital. Among this number thirty-six cases of atrophy from various causes were found. Of these only six were unilateral, and of these six three belonged to the infantile type to be described. In this tabulation the moderate bilateral diminution in size found in some cases as a result of chronic nephritis was naturally omitted.

A study of statistics shows that there is excessively small probability of a person having only one kidney, the result of congenital absence or non-development. There is much greater risk of meeting with a deficient kidney of the infantile type. None of the statistics take into account those congenitally small or atrophied kidneys which weigh from 1 to 1½ ounces and which may possess some though not a full amount of glandular substance. Congenital aplasia and hypoplasia of extreme degree are practically the only types which are considered in the various classifications.

The material on which this study is based comprises three cases, obtained at necropsy in the pathologic department of the Johns Hopkins Hospital, one case from the Hunterian laboratory, two cases in which the condition was discovered at the operating table, and two cases diagnosed clinically as anomalies of this type.

Following is a description of the material on which our studies are based:

CASE 1.—Cat. In some experiments to determine how quickly the remaining kidney could take up the total function after nephrectomy, it was noted that the amount of urine decreased at once and the function dropped to one-fifth the previous amount, as tested by phenolsulphonephthalein.[2] This result was strikingly different from that in other experiments previously done, in which the remaining kidney almost immediately assumed a function equal to that of the two kidneys. The cause of the great decrease in function was revealed later by finding an extremely small kidney, which weighed only 6.4 gm. The kidney first removed weighed 26.4 gm. A careful microscopic and chemical examination of the urine from the small kidney revealed no abnormality.

The left kidney, the larger, measures 4 by 3.5 by 2.5 cm. The right kidney, the smaller, measures 2 by 2 by 1.25 cm. The capsules of the kidneys strip readily, leaving a smooth surface, on which nothing abnormal is to be seen. On section, the three zones of the kidney may be made out readily. The cortex. in the large kidney, measures 5 mm., and in the small kidney 2 mm., and nothing abnormal is to be seen in either case. Microscopically, the large kidney shows a histologic picture characteristic of the normally hypertrophied kidney. In

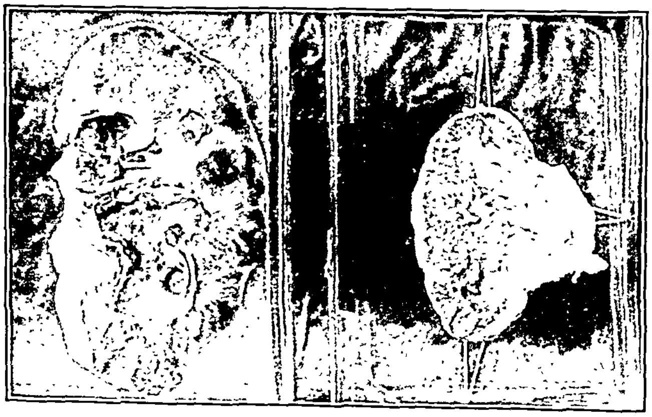

Fig. 2.—This is a kidney of the true infantile type. The section includes the lateral wall of the pelvis which gives the kidney the appearance of being hydronephrotic. It is unfortunate that the pyramids do not show in the photograph. With the naked eye the kidney is in every way normal.

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[1] McArthur, L. L.: Surg., Gynec. and Obst., 1911, xii, 391.

[2] Rowntree, L. G., and Geraghty, J. T.: The Phthalein Test; An Experimental and Clinical Study of Phenolsulphonephthalein in Relation to Renal Function in Health and Disease, Arch. Int. Med., March, 1912, p. 284.

the small kidney, the picture is quite different. Definite scars may be seen, radiating from the arcuate vessels to the surface. These scars appear to be associated with the interlobular blood-vessels. In the scarred areas the tubules are atrophic or entirely gone, while here and there hyaline glomeruli may be seen. In the intervening spaces, both the uriniferous tubules and the glomeruli are normal in appearance.

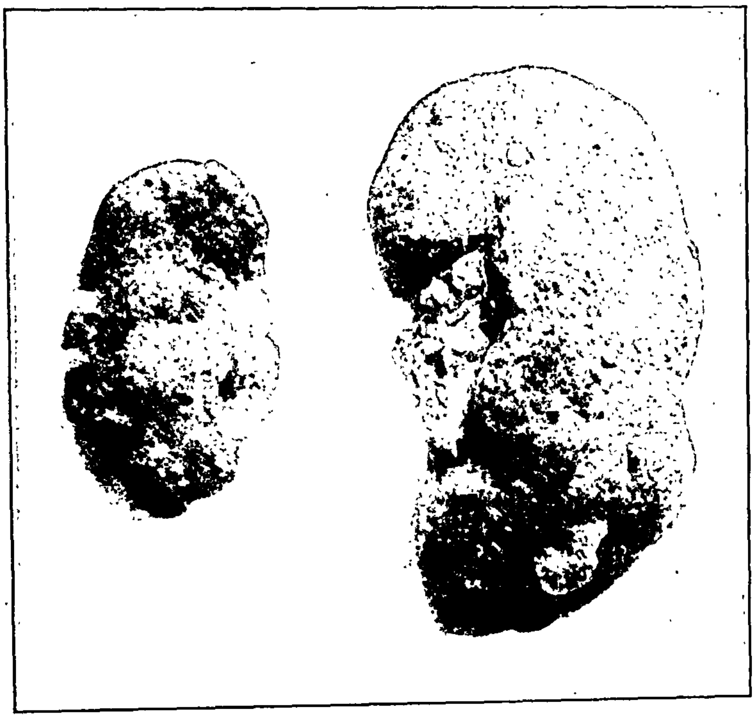

Fig. 3.—These are the kidneys described under Case 3.

Case 2 (Fig. 1).—Specimen in the Pathological Museum of the Johns Hopkins Hospital. The right kidney is enormously enlarged and measures 15 by 8 by 6 cm. The left kidney is extremely small and measures 3.5 by 2 by 0.75 cm. The capsules of both kidneys strip quite readily, leaving smooth surfaces. On section, the right kidney, aside from the huge size, shows nothing abnormal. The left kidney is very minute, and on section the architecture is partially obscured. Microscopically, sections from the right kidney show the usual findings in a kidney that has undergone compensatory hypertrophy.

Sections from the left kidney show that there is a minute amount of cortical tissue and only a few glomeruli are present. The glomeruli that are present, however, are large and normal. Associated with these glomeruli, and usually in their vicinity, are a number of normal convoluted tubules. The great mass of the kidney is composed of tubules, which look more like collecting than convoluted tubules.

Case 3. (Fig. 2).—*Diagnosis.*—Stricture of the left ureter and hydronephrosis of the left kidney; infantile kidney on the right.

M. T., woman, aged 48, admitted to the gynecological department of the Johns Hopkins Hospital (service Dr. H. A. Kelly), Nov. 13, 1912, with a history of attacks of pain in the left kidney region, accompanied by hematuria.

Examination showed a stricture at the lower end of the left ureter. The bladder urine was normal. Cystoscopic examination showed both ureteral orifices normally placed and normally functioning, the urine being perfectly clear. The patient refused treatment and left the hospital. Readmitted May 7, 1913, suffering with severe, acute nephritis, from which she died.

Necropsy No. 3935. The left kidney weighs 140 gm., and measures 10.5 by 5 by 3.5 cm.; the capsule strips readily and the surface shows a definite infarction and some small hemorrhages. The cortex varies from 1 to 2 mm. in width. On cross-section, the pelvis is markedly dilated, the dilatation involving the parenchyma and causing some pressure atrophy. The hydronephrosis was a result of adhesions (peri-ureteral) in the lower portion. The gross picture of an acute nephritis is also present.

The right kidney weighs 40 gm. and measures 5 by 2.75 by 1.25 cm. The cortex is 3 mm. in thickness. On gross examination, this kidney is apparently perfectly normal except for the changes, resulting from the acute nephritis present.

On microscopic examination the left kidney shows the usual picture of acute hemorrhagic nephritis, with added interstitial changes, the result of pressure atrophy. The right kidney, with the exception of the changes due to the acute nephritis, presents a picture of kidney tissue, normal in structure and architecture.

Case 4. (Fig. 3).—*Diagnosis.*—Chronic diffuse nephritis of left kidney; hydronephrosis and chronic nephritis in an infantile kidney on the right.

W. W., man, aged 70. Admitted Nov. 17, 1912, to Johns Hopkins Hospital, with hypertrophy of prostate. Death resulted from hemorrhage following prostatectomy.

Necropsy.—Right kidney measures 7 by 2.5 by 2.75 cm., and weighs 40 gm. The capsule strips readily, leaving a granular surface. Cortex is irregular in width, varying from 1 to 4 mm. The pelvis of the kidney is moderately dilated, but the papilli are not flattened. Microscopic section shows a moderate grade of chronic, diffuse nephritis, with a well-marked arteriosclerosis. The glomeruli are unimpaired, and the tubules are not replaced by fibrous tissue. The pathologic changes present in this kidney would not explain the diminutive size of the organ.

The left kidney measures 11 by 6.5 by 4 cm.; weight 180 gm. The capsule strips readily, leaving a granular surface. The cortex is irregular in depth and the pyramidal portion shows a definite increase in gray, translucent connective tissue. The pelvis is moderately dilated. The microscopic picture shows lesions similar to those on the opposite side.

Both of these kidneys are the seat of a typical, moderate grade arteriosclerosis, and the process is of about equal grade in each kidney.

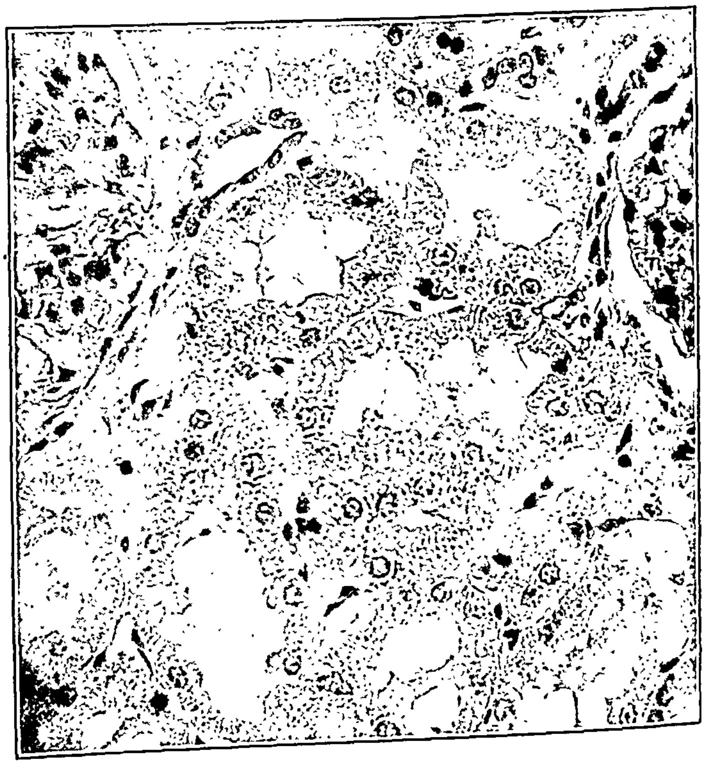

Fig. 4.—Microscopic section in Case 5.

Case 5. (Fig. 4).—*Diagnosis.*—Hypertrophy of left kidney; tuberculosis in an infantile right kidney.

T. C., man, aged 39. Admitted to Johns Hopkins Hospital May 16, 1910. The left ureter was readily catheterized, but on account of ulceration of the right ureteral orifice it was impossible to pass a catheter and the urine was collected transvesically for a period of one hour.

Results of examination:

RIGHT KIDNEY	LEFT KIDNEY
20 c.c.	40 c.c.
Cloudy.	Clear.
Microscopic pus and tubercle bacilli.	Microscopically negative.
Specific gravity, 1.016.	Specific gravity, 1.020.
Urea, 1.7 per cent.	Urea, 2.8 per cent.
Phenolsulphonephthalein, approximate time, eighteen minutes.	Phenolsulphonephthalein, approximate time, four minutes.
Excretion, a trace.	Excretion, 44.4 per cent.

At operation a small right kidney was found and removed by Dr. H. H. Young. The kidney measured 7 by 2.5 by 3.5 cm., and weighed 40 gm. The surface appeared normal, capsule was not adherent and the color was good. On palpation, the upper third seemed softer than usual, but the consistency of the remainder of the organ was firm. On section, the upper third of the kidney showed well-marked tuberculosis, between the pyramids and the cortex, with small cavity formations. The macroscopic appearance of the lower two-thirds is normal.

Microscopic examination of the kidney tissue in the lower two-thirds shows a slight diffuse increase in connective tissue, manifest about the glomerular capsule. The tubular epithelium is somewhat swollen and the general architecture is slightly blurred. In the non-tuberculous portion the pathologic changes present are extremely minute.

It is very evident that if, in this case, the disease had been in the hypertrophied left kidney, instead of in the infantile kidney, nephrectomy, if performed, would probably have resulted in death. The deficiency in this right kidney could not have been recognized, except through a functional estimation.

CASE 6.—*Diagnosis.*—Tuberculosis of the right kidney; infantile left kidney.

W. B. S., man, aged 30. Admitted to the Church Home and Infirmary February, 1911, with a history of urinary symptoms of two years' duration. Tubercle bacilli were demonstrated in the urine. The prostate, seminal vesicles and epididymes were normal. The bladder was so contracted that ureteral catheterization was unsuccessful. The total renal function, estimated by phenolsulphonephthalein, showed an excretion of 36 per cent. for one hour. The definite reduction in the total function suggested the possibility of a bilateral lesion. A double exploratory operation was advised. The left kidney was first exposed, and discovered to be about one-fourth the size of a normal kidney. In every other respect the organ seemed normal. There were no perirenal adhesions; the surface was smooth and the consistency normal. The ureter showed no thickening or induration suggestive of tuberculosis. In view of the reduced total renal function and the presence of an infantile kidney on the left, it seemed probable that tuberculosis was present on the opposite side. If the hypertrophied right kidney was tuberculous it was also evident that nephrectomy could not be performed, because of the deficient kidney on the left. Consequently, the right kidney was not explored.

The patient was seen again in April, 1913. His general health had been fairly well maintained. The urine was quite cloudy from pus and the total renal function, as estimated by phenolsulphonephthalein, showed an excretion of 25 per cent.

This is a decrease of 11 per cent. since the previous examination. It seems probable that the tuberculous process of the right kidney is causing a decrease of the total function, because of the inability of the left kidney to undergo compensatory hypertrophy.

CASE 7.—*Diagnosis.*—Tuberculosis of the right kidney; infantile left kidney.

Man, aged 27, admitted with urinary symptoms of ten months' duration. Tubercle bacilli were found in the urine. Catheterization of the ureters and estimation of function, the urine being collected for one-half hour, gave the following results:

RIGHT KIDNEY	LEFT KIDNEY
80 c.c.	4 c.c.
Cloudy.	Clear.
Microscopically, pus and many tubercle bacilli.	Microscopically, negative.
Phenolsulphonephthalein, approximate time, five minutes.	Phenolsulphonephthalein, approximate time, ten minutes.
Excretion, 30 per cent. for one-half hour.	Excretion, 8 per cent. for one-half hour.

In order to confirm the preceding findings, catheterization was repeated later with almost identical results. The total function, as estimated by phenolsulphonephthalein, showed an excretion of 35 per cent. for one hour, following intramuscular injection. Examination by Roentgen ray was negative for stone, but showed a kidney shadow in the left side, not quite half so large as the shadow on the right.

The normal character and color of the urine, the small amount secreted on the left side, the relatively high urea concentration and the small kidney shadow make the diagnosis of infantile kidney probable. Furthermore, the right kidney, although definitely tuberculous, still retained a function equal to or even greater than that of a perfectly normal kidney, which indicates that, previous to the onset of disease in this kidney, it was hypertrophic.

CASE 8.—*Diagnosis.*—Double ureter and pelvis with hematuria on right side; infantile kidney on the left side. First seen August, 1912. Following a severe blow over the region of the right kidney the patient noticed blood in his urine which continued up to the time of the examination. The urine is of a distinct wine color, and, on cystoscopic examination, a stream of bloody urine is seen issuing from the right ureter. Catheterization of the ureters was performed and functional estimation made by means of phenolsulphonephthalein, the urine being collected for one-half hour.

Results of examination as follows:

RIGHT KIDNEY	LEFT KIDNEY
Function free and rapid.	Function slow; about one-eighth the amount of that on right.
Bloody.	Clear, good color.
Microscopically, negative, except for red blood-cells.	Microscopically, negative.
Urea, 1.2 per cent.	Urea, 1.2 per cent.
Phenolsulphonephthalein, approximate time, five minutes.	Phenolsulphonephthalein, approximate time, five minutes.
Excretion, 35 per cent. for one-half hour.	Excretion, 4 per cent. for one-half hour.

The preceding examinations were repeated three times, with practically identical findings on each occasion. Pyelography, using 15 per cent. collargol, showed, on the right side, a double ureter extending from the crest of the ilium and ending in two apparently normal pelves rather widely separated. Injection of 7 c.c. into the left kidney pelvis produced definite pain and pyelography showed an irregular, small, indefinite pelvis. Estimation of the total renal function was normal, there being an excretion of 50 per cent. for one hour, following intramuscular injection of phenolsulphonephthalein.

In this case, on the right side, which is the source of the hematuria, there are two separate kidneys, or more probably, a large bifid kidney, which has seven-eighths the total function. On the left side there is a kidney which secretes a urine small in amount, microscopically and chemically normal, and with a high urea concentration, which is equal to that of the right kidney. The function, however, is so low that it is extremely improbable that it could maintain life. The practical importance of recognizing the deficient kidney in this case needs no comment.

Of the eight cases described, a histologic study of the kidneys was made in five. In one case, the kidney was discovered on exploration, but no tissue was obtained for microscopic study. In two of the cases, a clinical diagnosis of the condition was made, but no exploratory operation was performed.

A histologic study of the first two cases shows definitely the presence of pathologic changes. Over considerable areas there is an entire absence of tubules and glomeruli, these areas being represented by fibrous tissue. In other areas one finds perfectly normal tubules and glomeruli which could undoubtedly secrete a urine which is normal in general character. The changes present do not seem to be typical of secondary atrophy. The cause of the diminutive size in these two cases lacks definite explanation, although it seems probable that the changes are the result of prenatal disturbance. The kidney in Case 2 approaches true hypoplasia, and does not properly belong to the class of infantile kidneys, but has been included here because the normal tubules and glomeruli present could have secreted a urine normal in character and would offer the same difficulty in diagnosis, commonly present in infantile kidney.

In Case 3, the small kidney was normal in its general architecture, and the histologic changes present were only those of an acute nephritis. This kidney may properly be termed infantile because although the organ is diminutive in size, the architecture is normal.

In Case 4, both kidneys are the seat of a moderate grade of hydronephrosis as the result of back-pressure from the enlarged prostate and there is present also, in equal degree on each side, a moderate grade of chronic diffuse nephritis. The marked difference in the weight and size of the kidneys cannot be explained satisfactorily as being secondary to this evident pathologic process present in each kidney, as the amount of disease present would not explain the marked diminution in size on the right.

It seems probable that this discrepancy in the size of the two kidneys existed before the onset of the present pathologic process, because the left kidney, although the seat of chronic inflammatory changes, has a weight in excess of normal. This enlargement of the left kidney must have occurred before the onset of the present bilateral affection, for a kidney which has present in it a diffuse pathologic process does not undergo compensatory hypertrophy. Here the small kidney belongs to the infantile type and the diminutive size is not the result of secondary atrophy.

In Case 5, the tuberculous process was present in the upper pole, the remainder of the kidney being perfectly normal in architecture and general appearance. This kidney also belongs to the infantile type in that, although diminutive in size, the renal substance is entirely normal, except for occasional minute changes about the glomeruli. The smallness of the organ in this case is not the result of the tuberculous process, but the tuberculosis has occurred in a kidney congenitally small.

These five cases fall into two groups. In the first group, to which Cases 1 and 2 belong, a small kidney is present, which secretes a normal urine, but which is not truly infantile, in that the histology is far from normal. In the other class, under which Cases 3, 4 and 5 are grouped, the kidneys may truly be termed infantile in type. Of course the differentiation between these two types is of comparatively little practical importance to the operating surgeon, as the two present the same element of danger, in that they secrete a normal urine, but are deficient in function.

In two of these cases tuberculosis was present in the large, hypertrophied kidney, and in one the disease occurred in the infantile kidney. In a case like the last mentioned, the presence of this type of kidney cannot be diagnosticated with the present methods of examination. This, however, is of no practical importance. The danger to the surgeon of the infantile type of kidney is well illustrated by these two cases, in which the disease occurred in the larger hypertrophied kidney, and the presence of the deficient kidney on the opposite side can be detected by functional estimation only.

It is rather striking that the four infantile kidneys in which the weight was obtained were, in every instance, one-fourth the weight of the normal kidney. The three kidneys from man each weighed 40 gm. The uniformity in size and weight is noteworthy, and it is possible, that there may be an embryologic explanation of the condition. It seems quite apparent that these kidneys have not the power of compensatory hypertrophy, for with the decreasing function in the hypertrophic kidney, due to disease, there is apparently no attempt on the part of the infantile kidney to make up the deficiency.

CONCLUSIONS

The diagnostic points in determining the presence of a kidney of the type presented above, may be summed up briefly as follows:

1. When disease is present in the larger, hypertrophied kidney, the total function, as estimated by phenolsulphonephthalein, is decreased, and the function of the diseased kidney is usually greater than the function of the supposedly healthy kidney.

2. The function of the infantile kidney shows marked decrease, although the urea percentage and general character of the urine is normal, while the amount of urine secreted is relatively small.

3. Pyelography is of doubtful value, since the size of the kidney pelvis is usually not a reliable index of the size of the kidney.

4. In persons not too stout it may be possible to secure Roentgen-ray shadows, showing the presence of a diminutive kidney. In Case 7 considerable diagnostic help was obtained from the Roentgen ray, which showed a very small kidney shadow, less than half that of the opposite side. This, taken in conjunction with the functional findings and the character of the urine, was of considerable diagnostic aid.

In conclusion, it may be emphasized that kidneys of the infantile type are a menace to the surgeon if the opposite kidney is the seat of the disease. The character of the urine may be normal in appearance and the urea concentration or percentage may be high. The recognition of this anomaly may be extremely difficult, and its presence can be suspected only when function estimations are carried out.

We are greatly indebted to Dr. H. H. Young for the opportunity of studying two of the cases here cited, and to Dr. A. Keidel for the privilege of studying Case 8.

330 North Charles Street.

Presence or Absence of Hydrochloric Acid in Gastric Contents.—It has been the experience of T. Gillman Moorhead (Dublin *Jour. Med. Sc.*, Oct. 1, 1913) that HCl is almost invariably absent in the vomited matter in cases of acute dyspepsia and in many chronic disorders of the stomach; also it is found subsequently to be present in a test meal washed out in the usual way. Frequently vomited matter is intensely acid to litmus paper, but as a rule this will be found due to the presence of organic acids. The explanation is that in acute troubles gastric secretion is presumably inhibited, abnormal fermentation takes place, and hence the absence of HCl and the presence of organic acids.

HELIOTHERAPY WITH SPECIAL REFERENCE TO THE WORK OF DR. ROLLIER AT LEYSIN*

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If we open our school text-books on materia medica and therapeutics we shall rarely find any mention made of the qualities or therapeutic uses of solar energy. We learn the properties and supposed uses of scores of drugs and yet when we enter on practice, we find that our reliable therapeutic armamentarium is really a limited one. Water, fresh air and that most powerful agent of all, solar energy, which is supplied to us everywhere, receive only secondary consideration. The study and use of light, both artificial and solar, however, following the excellent work of Finsen, have come into prominence.

The use of light as a therapeutic agent is very old. C. E. Rogers tells us that some years ago, while traveling in the tropics of Central America, he observed a peculiar custom among some of the Indian tribes. Occasionally he would see one lying naked on the ground for hours at a time in the fierce rays of the midday sun. He learned that this was their method of treating consumption and rheumatism. The custom is an old one, having been practiced before the Spanish invasion and can be traced all along the western coast of the South and North American continents. In the Old World Herodotus as early as 484 B. C. describes the sun-bath, and the Romans built solaria on their houses for the purpose of utilizing the sun's rays. It is then lost sight of therapeutically until toward the end of the eighteenth century, when it was used to treat cancerous ulcerations.

Finsen by his great work established many scientific facts and again brought the subject prominently before the medical profession, and established it as a clinical method. The French school under Bonnet and the surgeons Ollier and Poncet of Lyon observed and reported the good effects of heliotherapy in chronic joint-affections. The application of the method was at this time confined principally to the warm sunny climate along the Mediterranean, until Bernhard of Samaden, Switzerland, began using it on the high plateau of Graubunden. He first treated granulating wounds, and later extended its use to surgical tuberculosis and now gives the following indications for heliotherapy:

I. Wounds: (1) traumatic in which primary healing is not probable as in case of those caused by blasts or crushing injuries; (2) due to circulatory disturbances, as ulcus cruris, mal perforans; (3) burns and frostbites; (4) infected wounds.

II. Tuberculosis of the skin and serous membrane. Tuberculosis of the lymph-nodes, bones, joints and others.

III. Carcinoma of the skin.

IV. Specific ulcers with little tendency to heal.

V. Leukemia, pseudoleukemia, tuberculosis of larynx and lungs.

In 1903 Rollier established the first sanatorium for the systematic treatment of surgical tuberculosis at Leysin, Switzerland, and since then he has erected two more at the same place, so that he can now accommodate 450 patients. These sanatoriums are located respectively at altitudes of 1250, 1350 and 1500 meters (about 3800, 4100 and 4500 feet). Two hundred beds are reserved for children. It is his work, his method and his results that I wish to review.

Before discussing his technic and results, it may be well to mention some of the properties of light.

Light is a wave-like disturbance which passes out in all directions from a luminous object through an ethereal medium.

Waves of light are not all of the same wave length. The difference in length makes itself known to our eyes as color.

When the sun's rays pass through a prism they are dispersed or decomposed into several kinds of light, and this we call the visible solar spectrum in which it is customary to distinguish seven colors—red, orange, yellow, green, blue, indigo and violet. A sun-ray, therefore, is really a bundle of rays and these individual rays do not occur singly in nature.

The different colors of the spectrum then are due to difference in length of the light-rays. The red are the longest, the violet the shortest. Each light-ray has three *properties, namely:* (1) *heat production,* (2) *light production,* (3) a chemical action. The red rays are principally heat rays. Light is most intense in the yellow. The violet rays have principally a chemical action; and are often called actinic rays. On both sides of the visible spectrum are large fields which are invisible to the eye and therefore called the invisible spectrum, or area of the ultra-red and ultra-violet rays. The different rays of the spectrum and the invisible rays differ as to their absorbability and therefore in their action, as only those rays can produce an effect, which are absorbed.

EFFECT OF LIGHT ON BACTERIA AND THEIR PRODUCTS

Downe and Blunt first showed that sunlight retards and inhibits the growth of bacteria. Dieudonné found that direct sunlight killed typhoid bacilli in one and one-half hours, daylight in eight hours, arc-light (800 candle-power) in eight hours and incandescent light in eleven hours. Arc-light is rich in ultraviolet rays. Tubercle bacilli are killed by the sun's rays in five hours at the seashore; in four hours at an altitude of 2,800 feet, and in three hours at an altitude of 5,000 feet. Diffuse light requires about double the time to produce this effect. This action is principally due to the chemical rays, though all rays have a bactericidal action. The ultraviolet rays also act on the ferments and toxins. Diphtheria toxin quickly loses its toxic property under the influence of these rays, while the antitoxin is less affected by them. Small-pox vaccine is but slightly altered by sunlight or diffuse light, but greatly so by ultraviolet light.

ACTION OF LIGHT ON THE HUMAN BODY

This varies according to the intensity, the altitude and the individual. Sunlight in passing through the atmosphere to the earth loses a great deal of its energy, the loss depending on the position of the sun in the sky, the density of the air strata traversed and the amount of moisture and foreign matter in the air. The chemical rays show the greatest, the heat rays the smallest loss. The light intensity in the higher altitudes is much greater than in the lowlands, and this difference is particularly marked in winter. According to Dorno and Weber, Davos (altitude 5,000 feet) at noon in winter has four times the amount of light that Kiel (sea-level) has, while this difference is only half so great in summer. In about the same manner the volume of the ultraviolet rays increases with the increase in altitude. The difference in the ultraviolet ray's intensity in higher altitude in summer and winter, however, is comparatively small, while in the lowlands it is great. The effect of light on the body is not as yet fully understood, but we may say when the body is exposed to sunlight for a period of time there results: (1) increased pigmentation; (2) increased growth of hair; (3) increased metabolism; (4) increase in number of erythrocytes; (5) local hyperemia; (6) decrease in number of respirations; (7) increase in depth of individual respiratory act; (8) fall of blood-pressure, and (9) stimulation of nervous system.

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* Read by invitation before the Chicago Pediatric Society, May 26, 1913.

Under the influence principally of the ultraviolet rays, pigmentation takes place on those parts of the body exposed. This is as a rule preceded by an erythema of varying intensity, according to the strength of the light. The pigmentation is characterized by an increase of the pigment granules in the epithelial cells, as well as in an increase in the number of chromatophoric cells, which are probably epithelial cells which have migrated into the connective tissue. This pigmentation by some is considered a protective process on the part of the body against the ultraviolet rays. Others hold that it transforms short-waved, chemical rays into long-waved rays, which have a deeper penetration. A combination of the two views is probably more nearly correct. It is very important in practice, as Rollier states that prognosis and rapidity of healing are as a rule proportionate to the degree of pigmentation. This pigment absorbs the violet rays, but not the red.

All rays of light penetrate the human body, the violet or chemical rays possessing this power to a less degree than the heat rays.

Lenkei says that only about a hundredth part of the light falling on the body penetrates it 0.5 cm., but some rays reach a depth of from 5 to 6 cm. That light penetrates the thickness of the hand is proved by the experiments of Oninus. When light penetrates the skin, practically all the chemical rays are absorbed by the blood. This is a striking fact and probably some day will help explain the good results of heliotherapy. When we consider that exposure to light causes a local hyperemia, the amount of energy absorbed by the blood must be enormous. Von Schlaffer has also shown that blood during exposures to light absorbs light energy, which, in the dark, it can again transfer to a photographic plate. Is it not possible, as he says, that it can also surrender this accumulated energy to the internal organs, and thereby influence their function and possibly pathologic processes? Rollier rarely sees acne or furunculosis on pigmented skins, and during an epidemic of German measles noticed that all the well-pigmented children were free from eruption and even in those wearing jackets the eruption only appeared on those parts of the body not exposed to the sun-bath.

TECHNIC OF HELIOTHERAPY AS USED BY DR. ROLLIER

While the French surgeons and even Bernhard of Samaden at first relied principally on local exposures of the parts affected, Rollier considers a general exposure of the body as fundamental and the local exposures as only secondary in importance. The dry, invigorating air of the higher altitudes is also called to assist the solar energy. This it does by increasing the action of the skin, thus aiding elimination, drying up wounds when present and increasing the general tone of the body. The treatment then is really a combination of light and fresh air. When light is not available the air-bath is used alone. According to Saake, mountain air also contains many more radio-active emanations than the air in the lowlands. Furthermore, in higher altitudes the differences in temperature in the shade and in the sun are very great, so that at Leyson when there is snow on the ground, temperatures of 95 to 120 F. in the sun are not uncommon. This allows the treatment to be carried on without interruption in winter, as the patients do not suffer from the cold.

Rollier in his address before the Gesellschaft deutscher Naturforscher and Aerzte in Münster in 1912 says:

> It is in surgical tuberculosis that we have seen the best results from heliotherapy, and we have made the treatment of it our life work. As a result of my experience in the use of the light-cure in higher altitudes, based on an experience of nine years, I maintain to-day that the cure of surgical tuberculosis in all its forms, in all stages, as well as at every age of life, can be accomplished.
>
> The closed surgical tuberculosis always heals, if one will only be patient, and above all if one understands how to keep it closed. To transform a closed tuberculosis into an open one means to increase the gravity of the case a hundredfold. A diminution of the vitality of the tissues is the inevitable consequence. . . . To regard a surgical tuberculosis as a local disease which can be cured by local treatment alone is a ruinous error. On the contrary, it is a general affection which requires general treatment. Of all infectious diseases it is the one in which the individual resistance plays a deciding part. Our first effort therefore is directed to improve general conditions and thus to bring about a healing of the local focus by treatment of the entire system. A rational local treatment is necessary as well, provided it is not too one-sided.

Patients on arriving at the sanatorium are put to bed for a few days, even those whose local condition does not make this imperative. They are thus allowed to become acclimated to the altitude. After three or five days as a rule, they are pushed out onto the verandas into the sunshine. The head is covered with a white hat or an umbrella, the eyes protected with dark glasses and a white garment worn over the body. On the first day the feet are exposed three times a day for five minutes; on the second day three times ten minutes, and the legs to the knees three times five minutes; on the third day the exposures are increased five minutes three times daily; on the fourth day thighs are included; on the fifth day the arms; on the sixth day the back and on the seventh the abdomen and chest, so that at the end of the first week some parts of the body are exposed for one and one-half hours per day. The exposures are increased five minutes three times daily until the patient gets a full sun-bath for from three to five hours daily. This, as a rule, is the maximum, although some bear the treatment for seven hours. Individualization of course is necessary, and in some instances the scheme of exposures must be modified to suit the case. Pulse and temperature are closely watched and used as an indicator of the patient's tolerance.

By this progressive increase of the time of exposure he avoids an erythema solare, and gradually the body acquires the desired degree of pigmentation which seems to be so essential. The rapidity and degree of pigmentation are as a rule in direct proportion to the power of resistance of the patient. Blonds and especially red blonds who pigment less seem to offer a more unfavorable prognosis.

Nervous patients must be treated carefully as they often complain of headaches and nervous symptoms. These restless, excitable patients receive more air-baths and shorter exposures to the sun, while the fat phlegmatic patients generally bear the sun-baths well.

As the healing of surgical tuberculosis requires rest of the parts affected, all cases except those of the upper extremities and lymph-nodes must be treated in bed. We must immobilize the parts. It the case of the upper extremities this is done with splints and bandages, which are removed during the exposure period.

Cases of tuberculosis of the hip, spine, lower extremities and peritoneum require immobilization in bed until healed; that is, until long after all pain has ceased and roentgenoscopy shows that the focus is healed. This, however, requires months and often a year or more. It is in cases of long duration particularly that we observe the better effects of treatment carried on in high altitudes over those in lower altitudes, for the former patients owing to the invigorating action of the mountain air, retain a good appetite, and with a good diet often take on weight. Not only that, but an increased tonus of the tissues, especially in children, is frequently seen. At lower altitudes loss of appetite and the depressing action of the heat interfere with the systematic treatment.

Rollier has discarded the use of all non-removable appliances for immobilization as antagonistic to the principles of heliotherapy. By their use, no matter how skilfully made, the activity of the skin is greatly reduced; exposure to sun and air is impossible, metabolism decreases and atrophy results. These factors tend to prevent healing and if healing does take place, the functional result is, in many cases, a poor one. All appliances for immobilization are therefore removed daily during the period of exposure, except occasionally in the case of very refractory children with spondylitis. In these cases he cuts large fenestra into the jackets. In general he applies extension apparatus, splints, bandages and removable corsets of celluloid. In many cases of spondylitis, a corset or jacket made of heavy material, which is in turn fixed to the mattress, is employed. Ambulatory appliances usually made of celluloid, so that they can be removed and treatment continued at home, are used only after the tuberculosis is healed to protect the newly formed bone.

Medication is rarely resorted to; children, however, receive cod-liver oil.

Cold abcesses unless interfering mechanically are given ample time to become absorbed. This occurs in a fair percentage of cases. Under all circumstances the rupture of an abcess is to be prevented, as a mixed infection is practically unavoidable and makes the prognosis so much worse. If necessary, they are aspirated and injected with iodoform, 10 per cent., in oil or glycerin, to guard against mixed infection. This is done even daily if necessary; every means and effort are used to avoid spontaneous rupture. If the patient has or develops a sinus, it is covered, when not exposed to the sun, with an alcohol dressing to prevent infection as much as possible. Sinuses, no matter where located, when exposed to light, first show an increased secretion, then gradually dry up, the granulations become healthy and complete healing is frequently seen. According to Bernhard, the scars resulting are firmer, yet more elastic, than when heliotherapy is not employed, and consequently produce less contraction.

The high fever due to mixed infection drops, large open wounds and ulcerations heal with a *minimum* of deformity, and thickening of joint capsules and exudates are likewise absorbed in many cases.

Franzoni, an assistant of Rollier, has recently published an interesting article on the behavior of bone sequestra under the influence of light. As a rule from three to five months are required for a sequestrum to form and free itself from the surrounding tissues. Heliotherapy increases the speed of evolution of the sequestrum and causes its spontaneous expulsion. Rapid and firm healing follows. By this method, only the necessary portion of bone is eliminated, and no new wound surfaces are created, as in the case of sequestrotomy. Franzoni has observed that when cloudy days intervene a sequestrum near the surface has retracted deeper into the cavity, to be fully expelled after further exposure to the sun.

The analgesic effect of the sun's rays is seen in almost all cases. In rare cases the symptoms become exacerbated but soon abate, and all cases show a marked lessening and more frequently an absence of pain after a short period of treatment. This, in turn, helps the patient by allowing him plenty of rest and sleep, the exposure to the sun being conducive to sleep itself.

In many cases of joint tuberculosis he finds a far better functional result after the use of heliotherapy than experience with other methods would lead one to expect. This he considers as characteristic of the use of the sun and air treatment! Passive and active movements are not employed.

Bardenheuer, assistant to Rollier, in a study of the blood, gives the following data:

During from the first to the third day of treatment, the red corpuscles usually increase about 500,000, and the white 3,000, the maximum in increase being reached about the third day. The leukocyte count in closed cases runs about 10,000, in cases with mixed infection from 13,000 to 17,000. He has found that cases in which the maximum increase in erythrocytes requires much more than three days are those offering a poorer prognosis. When healing starts there is a slight decrease in the number of erythrocytes.

The application of the treatments to specific seats of the disease is in substance as follows:

TREATMENT IN VARIOUS FORMS OF TUBERCULOSIS

Spondylitis.—These patients are put to bed and immobilized as mentioned before. Children, if they wear a jacket, have a large fenestrum cut anteriorly, as the vertebrae in children are not much further removed from the surface of the abdomen than from the back. A gibbus, if present, is padded with cotton or a pillow, or, more frequently, the patient is placed on the abdomen with a triangular pillow under the chest. This position increases lordosis, and prevents, or when present, decreases the gibbus. After healing is verified by roentgenoscopy, a celluloid corset is worn. These cases require from one to two years.

Coxitis.—An extension is applied in bed and the pelvis is elevated on a pillow, to expose the entire coxofemoral trochanteric region to the sun. At the same time this avoids contractures. Abscesses when not absorbed are aspirated. The treatment requires at least a year, but splendid functional results are obtained.

Lymph-Nodes.—Bronchial lymph-nodes, lymph-nodes of the neck, have yielded beautifully to this treatment. In some cases the lymph-nodes appear spontaneously. In others it becomes necessary to aspirate; but even when there are sinuses the end-results are good, and the scars as a rule less disfiguring than in operative cases, complicated by infection. The treatment is contiued from six months to two years.

Tuberculosis of Peritoneum and Ileocecal Tuberculosis.—Even in these cases, the prognosis as a rule is good. Under the influence of the sun and fresh air, the pain soon subsides, exudates in the abdomen become absorbed; large tumor masses in the ileocecal regions, which were declared inoperable by Roux, disappeared and healing took place.

Genito-Urinary Tuberculosis.—The principal effects of heliotherapy in these sad cases is the lessening of pain and the amelioration of distressing bladder symptoms.

Tuberculosis of the bones of the hands and feet offers an especially good prognosis.

Closed tuberculosis of the pelvic bones is amenable to this treatment, but a mixed infection in cases of sacro-iliac tuberculosis makes the case practically a hopeless one.

Patients with a combined local tuberculosis and tuberculosis of the lungs often show a marked improvement of the condition of the lung. As Rollier, by his method, exposes the thorax last, he has seen no ill effects such as hemoptysis. He says that bad effects such as congestion of the head, nausea, apoplexy, etc., are seen only when the method is improperly used and we fail to individualize.

Rollier's results[1] have attracted attention the world over, and such men as Bardenheuer, von Eiselsberg, Escherich, Kocher and others have written enthusiastically about the work at Leysin. Bardenheuer, who had very radical views on the treatment of surgical tuberculosis, now rarely resorts to a resection. He says, "Resection of a joint is a mutilating operation compared to Rollier's results."

In endeavoring to explain the action of the sun and the air, we encounter difficult problems. Several theories have been advanced. I shall not repeat them, as they are not convincing. We must here again accept the clinical results and content ourselves with empiricism. The pigmentation of the skin, the energy imparted to the blood by the absorption of rays, and the hyperemia of the skin probably all play an important part.

Good results are also seen in cases treated in the lower altitudes, although it often becomes necessary to interrupt the treatment on account of extreme heat or cold. Bardenheuer has reported on thirty-five cases treated at Cologne and is well satisfied with his results. He found that old fistulas, postoperative fistulas and old resections with mixed infections ofter healed promptly after exposure. Furthermore he employed the treatment in cases with multiple lesions which from a surgical point of view offered little hope, and saw complete healing take place, so that to-day he is one of the most ardent advocates of the Rollier treatment.

The principal drawback to the Rollier method or any other method of heliotherapy is, and always will be, the length of time necessary to obtain results, painstaking systematic work extending over months and years being necessary.

We must not lose sight of the fact, however, that when the ordinary orthopedic treatment is carried out a great deal of time is required likewise, and frequently at the end a resection endangering life becomes necessary. Not until sanatoriums are provided and especially places where the poorer class may find aid will heliotherapy be a complete success.

In the United States we have an abundance of places which would fill every requirement. Climate, plenty of sunshine and altitude can be had in Colorado, Arizona, California, New Mexico and in many other states; but in addition to this is required financial aid for institutions and the patients. The action of the states would be important. So much has been said in recent years on the subject of conservation that the matter of conservation of human beings and restoring them to usefulness cannot be foreign to American thought and American economic policies. The expense of bringing those afflicted with surgical tuberculosis back to health would be less than the burden imposed on state and charities in caring for the lifelong cripples created by this disease.

Here in the establishment of sanatoriums along the lines indicated is a field for the action of the state or for a broad charity.

Then, too, we could follow the good advice of Rogers, who says, "The study of solar phenomena and their relation to health and disease should be pursued with interest, and solar energy turned to account in maintaining the one and combating the other."

In the preparation of this article free use has been made of the publications of Rollier, Witmer, Bardenheuer, Jesionek and Franzoni.

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TREATMENT OF LOOSE TEETH DUE TO INFLAMMATORY DEGENERATION OF THE GUMS AND ALVEOLAR PROCESS *

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The disease of pyorrhea alveolaris, in spite of its name, is not always associated with a flow of pus from the infected tooth-sockets. As a matter of fact, pus does not appear in 25 per cent. of the cases. The main symptoms are inflammation of the peridental membrane, bleeding of the gums at the slightest touch and a tendency for the teeth to elongate and be sensitive to mastication. Finally, the gums separate from the roots of the teeth, forming pockets in which salivary calculus and infection cause such centers of irritation and disintegration that the destruction of the teeth involved is only a question of time unless the tartar is removed from the roots, the mass of infection destroyed and the gums stimulated to reattach themselves to the roots of the teeth.

A single blind fistula from an infected root may cause the most profound nervous depression, which, being chronic, will be recognized only by its disappearance with the cure of fistula.

Osler, Goadby, Daland, Hunter and Billings, I believe, have not overstated the bodily ailments that time will show to be directly traced to mouth infections. That mouth infection is, in a great majority of cases, associated with Bright's disease, diabetes, cardiac, hepatic, renal and stomach disorders has been noted for a long time, but within recent years it has been shown that these disorders are, in many instances, ameliorated and, at times, entirely eradicated by the removal of the infecting foci from the mouth. My experience in the treatment of pyorrhea alveolaris with its associated tooth infections accords with these findings.

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[1] Rollier (Verhandl. d. Gesellsch. f. Kinderheilk. d. 84 Versamml. d. Gesellsch. deutsch. Naturforsch. u. Aerzte in Münster) publishes a report of 6[illegible]0 cases in which 355 patients were adults and 295 children. There were 450 cases of closed surgical tuberculosis and 200 cases of open surgical tuberculosis. In the cases of closed surgical tuberculosis 393 patients were cured, 41 improved, 11 remained stationary, and 5 died. Of the patients with open surgical tuberculosis, 137 were cured, 29 improved, 14 remained stationary, and 20 died.

* Read in the Section on Stomatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* Because of lack of space, this article is abbreviated in The Journal. The complete article appears in the Transactions of the Section and in the author's reprints.

The development of medical science has now placed on the dentist not only primarily the repair and restoration of the teeth that they may look well and give efficient power of mastication, but the responsibility of deciding whether or not patients shall be inflicted with a long list of diseases that owe their origin and existence to infections within the teeth and the adjacent tissues. This question of autotoxemia has been a great shock to the prejudice of the medical world at large, but to the dental world, trained more along purely mechanical lines, with little or no bacterial knowledge, the question of autotoxemia is no less than revolutionary. It is as though cabin-boys had suddenly awakened to find that they had been steering the ships of the human fleet, without charts or knowledge of navigation, over rocks, whirlpools and mines, all the time blaming unavoidable fate for the death and disaster, when the wrecks, deaths and disasters were directly caused by their own well-meaning, blundering hands. The medical world at large cannot escape this indictment, but Dentistry, inasmuch as she recommends appliances and fixtures that cannot be cleansed, that obviously may cause and perpetuate toxemia, is overwhelmed by the contemplation of the long lists of preventable diseases and the gruesome toll of deaths that her well-meant efforts may have unwittingly occasioned. The manifestly undisputed fact that the removal of non-cleansable crowns and bridges have caused the rapid disappearance of heart murmurs, violent nervous derangements, duodenal ulcer, anemia, etc., is a convincing proof of what wholesale disease had been caused by the mechanical appliances now generally recommended.

When we come to pyorrhea and pyorrhea pockets, which the great majority of dentists class as incurable, we have come to the great divide, for those dentists who shall control and cure this great scourge shall take their places in the dentistry of the future, and those who neglect this important source of human disease shall be relegated to the spheres of those who unwisely attempted that which they were unfitted to accomplish; for the cure of pyorrhea alveolaris has been more or less successfully accomplished for the last fifteen or twenty years.

While, as previously stated, pyorrhea is associated with various disturbances of which it may be the primal and continuing cause, such as gout, Bright's disease, diabetes and cardiac, hepatic and renal disorders, such specific disease as syphilis, gonorrhea and tuberculosis, by their debilitating effect on the tissues of the mouth, may so lower the vitality of the gums that infections that otherwise would be repudiated, penetrate the peridental membrane and by a subtle toxemia still further depress the general vital forces. This infection having penetrated the gums, forms a small abscess that partly strips away the peridental membrane from the tooth-neck, forming a pocket, which once formed continues the disease even after the general systemic disorder may have been conquered. It is probable that some one of the numerous passing diseases, such as typhoid, measles, grip, or even a bad cold, has temporarily lowered the physical resistance of the gum tissue to the point of permitting the ever-present infection to penetrate and form the self-perpetuating pockets, thus leaving the pyorrhea to continue without apparent systemic cause.

If the systemic cause has passed and the pyorrhea has not created a new one, the disease may perhaps be successfully treated by local means and a permanent cure hoped for; but if the pyorrhea is associated with serious general disorder, local treatment, important as it is, can be held only as a palliative and must be supplemented by judicious systemic treatment. The most important systemic treatment in the cure of pyorrhea consists in the discriminating use of vaccines that will produce antibodies in the blood as supplementary adjuncts to the proper local treatment; and yet, important and valuable as the vaccine treatment unquestionably is, without the proper local treatment that removes infecting foci and stimulates the gums to heal and reattach themselves to the roots, vaccine treatment can only reduce the severity of the symptoms; it cannot effect a cure.

About seven years ago it was my good fortune to discover that commercial hydrofluoric acid would disintegrate tartar with no macroscopic action on either cementum or enamel of an extracted tooth. The poisonous action of this acid precluded its use as a therapeutic agent to be applied to the gums. Through an extensive series of experimentation it was proved that a 23 per cent. solution of ammonium bifluorid (an acid salt of hydrofluoric acid) will disintegrate the tartar on a tooth as readily as hydrofluoric acid itself and also leave the tooth apparently unsoftened. The following is a safe, practical method for its manufacture: Forty c.c. of commercial hydrofluoric acid should be placed in a wax bottle and 27 gm. of chemically pure ammonium carbonate slowly added, a small lump at a time, the bottle being closed after each addition to prevent undue escape of fumes. When this mixture is allowed to rest for twenty-four hours it is ready for use. The temperature of the mixture during manufacture should not exceed 60 degrees Fahrenheit. The solution of ammonium bifluorid thus obtained gives excellent therapeutic results. Any variation in the strength of the acid made by this method seems to be of no importance chemically.

The solution of ammonium bifluorid may be injected once or twice a week into pockets around loose teeth, but care must be taken not to inject it into fresh cuts, as such procedure will cause great pain. The patient should spit without rinsing the mouth with water, the saliva acting as a protection against irritation. After one or two injections the soreness and inflammation will largely disappear, and even the general symptoms of toxemia will sometimes be found to have abated. The tartar scale that could not be easily and painlessly removed at the first two treatments will now tend to be so loosened that its thorough removal by scalers will be easy for both patient and dentist. After four or five applications, one week apart, black scales that have escaped the instruments will sometimes be found floating loose in the pockets, so that they can readily be picked out; finally, the root will become as smooth as velvet to the touch of an instrument. When this stage has been reached it will be found that the scalers cannot be so deeply carried into the pyorrhea pockets as was easily possible in the beginning. To do so causes pain and a free flow of blood. This indicates that new granulations are forming, which should not be ruthlessly broken up either by instrumentation or by injection of the bifluorid into them. Once each week the solution should be allowed to flow gently into the pockets, a procedure which results in continuous healing and is not productive of pain. Careful exploration for tartar on the root within the pocket is always advisable. Reattachment of the gum to the root, however, can be accepted as assurance that that portion of the root has been thoroughly cleansed. The scaling in that place should then be discontinued, while the weekly applications of the bifluorid alone should be used. If, however, at the end of two or three months any of the pockets have not entirely healed they should be re-explored with scalers and the treatment repeated as for a new case, although by this time most of the original pockets will have disappeared, and where they existed the gums, with a slight contraction at the neck, will be found firmly adherent to the tooth. Teeth that have lost more than half of their gum attachment have become, under this treatment, firm and comfortable to the action of normal mastication.

Let us now consider some of the other means of local treatment in the cure of pyorrhea alveolaris. Loose teeth may be splinted together so as to give immobility, but this should always be done in such a manner as not to prevent thorough cleansing of the gum around their necks. Any malocclusion should be remedied so that loose teeth may be relieved of the excessive pressure of mastication due to thickening of the inflamed peridental membrane. When a pocket has approached an apical foramen near enough to infect the pulp, the pulp should be destroyed and the root canals thoroughly sterilized and filled. This should be especially looked to in the case of molars in which the pocket extends through the bifurcation and down to the tip of one of the roots. It is sometimes excellent practice to cut the crown midway through the grinding surface through the juncture of the roots, finally extracting the diseased root with its side to the crown. This exposes the other root or roots so that they can be filled and cleansed as easily as a bicuspid. With upper molars, if the palatal root is necrosed, this operation is most satisfactory as it leaves the mouth to all appearances unchanged, and works for greater stability and more rapid recovery by not forcing the remaining root or roots to stand more than their fair share of mastication.

An excellent mouth-wash for use at home consists of a saturated aqueous solution of sodium silicofluorid which amounts to a 0.61 per cent. solution. This, when held for a minute in the mouth, morning and evening, and freely swashed for at least a minute through the teeth is a great assistance in relieving inflammation of the gums. Like the bifluorid it seems to restrain the deposition of tartar on the teeth, except in about 1 per cent. of cases, in which it seems to increase it slightly. But even in these cases the gums heal promptly and the superficial deposit is easily removed from the teeth with brush and pumice. The disagreeable flavor of the solution can be disguised by adding an equal amount of sodium chlorid or a judicious quantity of aromatics.

An efficient tooth-powder that will liberate enough free oxygen to make from 40 to 50 drops of a 3 per cent. peroxid solution for every 10 grains used on the brush in the mouth is as follows:

Magnesium peroxid (200 mesh sieve)	60 parts
Sodium perborate	30 parts
Castile soap and flavoring	10 parts

This can be used morning and evening for brushing the teeth and should be swashed around the interstices for a full minute before being ejected from the mouth. Without thorough cleansing and brushing of teeth and gums morning and evening antiseptic washes will, however, be of no avail. Since the tooth-brush cannot cleanse between the teeth these surfaces should be swept free from bacterial deposits with floss-silk morning and evening, and the teeth and gums thoroughly brushed with strokes not less than an inch and a half long, and rotary wherever possible. The brush should be small, not over an inch and a half long, the bristles not over a quarter of an inch, and narrow, so that when the mouth is partly opened the brush can be placed between the ramus of the jaw and the third molars. Most brushing does not extend beyond the spring of the bristles, which instead of giving bristle friction merely pivots the bristles without cleansing. The upper and lower third molars more frequently decay and are subject to pyorrhea alveolaris simply because they are not cleansed. Structurally, they are not weaker than any other teeth. At each visit of a patient it is most essential that the necks of all the teeth be examined for bacterial plaques that may have been accumulating undisturbed since the last visit. The patient should be shown what movements of the brush are necessary for their removal, for a final test of a method of brushing the teeth and gums is, Does it clean away the bacterial plaques? Ninety-nine out of a hundred cleanly people never brush the thick bacterial plaques from their third molars, or, as a matter of fact, from half the other teeth, simply because they have never been taught how. Gums as well as teeth should be thoroughly brushed twice a day of all bacterial plaques. Observation on my patients proves that healthy gums are no more injured by vigorous brushing than is the skin adjacent to the finger-nails. Inflamed soft gums will unquestionably be made sore for the first week or two, but persistence on the part of the patient and assistance on the part of the dentist in touching up the sore spots with silver nitrate will soon strengthen the gums to almost any friction the tooth-brush can give them. The question of vigorous cleansing and massaging the gums with the brush is not only a question of removing external films of infection, but is also for the purpose of producing an auto-inoculation that will create antibodies in the blood for the purpose of combating the disease, a vigorous massage of the parts causing a local hyperemia, which enables the antibodies in the blood to come into more intimate contact with the infecting bacteria. This is a most important phase in the cure of pyorrhea and one that has not been sufficiently emphasized. The formation of antibodies for the cure of pyorrhea is a means of eradicating pyorrhea from the system. The auto-inoculation caused by vigorous gum brushing combined with the judicious use of carefully prepared vaccines have given results of a systemic improvement that are little less than marvelous.

Medical literature is so full of the reports on successful vaccine treatment for mouth infection that they cannot but convince the most skeptical that there must be value in the treatment. Goadby's work in this field is deserving of great credit Cummins[2] has published a recent article on this subject wherein Goadby's methods are followed. The work of Leary and his associates is more in accordance with modern bacteriologic methods, however, and their reports are more in accord with the bacterial findings of this paper.

About two years ago I began the vaccine treatment as an adjunct to my local pyorrhea treatment. I was decidedly skeptical because pyorrhea does not seem to be caused by a specific bacterium, but may be caused by any one of several species, or various combinations of these. Nevertheless, from the very start such increased improvement locally and systemically was obtained that the great value of the treatment could not be doubted. The results in almost every case showed a consistent healing of the pockets and a disappearance of infection from the gums. In about 50 per cent. of the cases there was a distinct improvement in the general physical condition, which, as before stated, being chronic was sometimes made more apparent by its absence than its presence. In the forty cases that are used as the basis of this report, the streptococcus, staphylococcus, *Bacillus influenzae,* pneumococcus, *Micrococcus catarrhalis,* diphtheroids, Friedländer bacillus and an occasional unidentified bacterium were used in the vaccines. The *Streptococcus viridans* appeared in about 25 per cent. of the cases. That the vaccines for pyorrhea alveolaris for forty cases contained such a consistent combination of similar germs for so many cases with so comparatively few unidentified strains may be partly due to the method used in collecting the specimens so as to exclude the incidental or extraneous flora of the mouth. My method will now be described.

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[2] Cummins, R. C.: Jour. Vaccine Therap., March, 1913, p. 59.

When the infected area appeared at the tip of a root in which the pulp had died and the root canal had been filled, the culture was always taken through the root canal, which was drilled out with a fine sterilized piano-wire drill until the end was nearly reached. The canal was then sterilized with phenol (carbolic acid), wiped dry with cotton and then blown out with hot air. When this had been accomplished and the tooth had been carefully guarded with a napkin to prevent infection from the mouth, another sterilized drill was passed down to the end and then plunged through the tip into the infected area. This was then streaked over the blood-agar in the ordinary manner. At times, however, the infected area appeared near the tip of a root or roots in which the pulps were alive. In this case the root-canal method of obtaining the specimen was not feasible, so the following method was substituted: The mucous membrane over the indurated infected spot was cocainized and a thin cautery plunged down to the bone. A sterilized bone-drill was then passed through the outer plate of the alveolar process and the patient dismissed for two days. On his return the opening in the gum, on being protected with a napkin, was cauterized with pure phenol and then wiped dry. Then the sterilized point of a small sterilized platinum-pointed glass syringe or platinum spear was inserted into the bony opening made previously by the drill, and a small drop of bloody fluid extracted, which with due care was transferred to the blood-agar medium. This material was supposed to contain the bacteria that had gathered for the purpose of preventing reorganization of the tissues.

To take a specimen from a pyorrhea pocket the following method was used: The neck of the tooth was first carefully washed with 95 per cent. alcohol so as to remove all outside bacteria as much as possible. The tooth was protected from mouth infection by a napkin, and then a small cup-shaped spear of thin platinum was heated to a cherry red and plunged to the bottom of the pocket. Such a procedure it was thought would get not only the pus but also a slight amount of blood from the walls of the cavity. It was thought that the hot platinum would kill any extraneous flora, while the cooled metal would carry to the blood-agar only the germs directly responsible for the disease in question. It must not be forgotten that pus is sometimes sterile, while the true cause of infection may lurk within the walls of the abscess from which the material is being obtained.

The vaccines were then made up so as to contain all the germs found, except the spore formers and the anaerobes that were not grown. While the bacteria of these classes may sometimes play a rôle in the infection the results of vaccine treatment indicate that in these cases their rôle is a minor one. The staphylococci were made to give 300 million to the cubic centimeter. Streptococci, diphtheroids, pneumococci, *Micrococcus catarrhalis, Bacillus influenzae* and unclassified bacteria were put in so that each would show 50 million to the cubic centimeter. In ordinary cases of chronic pyorrhea the initial dose is 75 million staphylococci and 12 million of each of the other bacteria, and the dose is steadily raised according to the reaction at the site of inoculation and the general systemic response. If the patient showed exceptional frailness or the inflammation was exceptionally acute, the initial dose was reduced to 37 million staphylococci and 6 million of each of the other bacteria. These doses were generally given a week apart in the arm, or, in thin patients, in the back.

I have not used the opsonic index in the treatment of pyorrhea alveolaris. I feel that clinical symptoms have been a sufficient guide. An interesting observation which I have not seen mentioned elsewhere is the occasional persistence of the induration which forms at the point of injection. It has appeared to me that this can be due only to a lack of digestion and absorption of the bacterial bodies. So long as the induration markedly persists we have an indication that the potentialities of the vaccine injection have not been exhausted. Therefore, further injections may be temporarily withheld or smaller doses given while absorption in the seats of induration is stimulated by massage. This method gives excellent results, and tends to minimize the danger pointed out by Allen,[3] when excessive reaction is caused by doses which may have been perfectly well borne on several previous occasions. As Allen says, however, it should always be borne in mind that, if the systemic reaction lasts over twenty-four hours, it is wise to increase the interval between the doses, and a larger dose should not be given especially if the patient makes good progress on the smaller dose.

If there is a tendency to the rapid formation of creamy tartar deposits on the teeth prior to vaccine treatment, it will be noted that, as the antibodies are formed and the gums show signs of healing, the tartar will be deposited much less rapidly and that the tartar deposited is of a more solid, removable nature and does not tend to burrow under the gum margins. This change in the deposition of tartar I have finally come to regard as a distinct symptom of the successful progress of the vaccine inoculations.

When a pyorrhea pocket shows sudden signs of inflammation during treatment it is always wise to open it surgically with a drill along the root to be sure that there is no back-pressure of pus, and that the antibodies have full opportunity to enter the seat of infection for the purpose of aiding in the cure; for above all things it should be remembered that the vaccine treatment can be successful only when accompanied by judicious local treatment of a surgical and therapeutic character. This applies to all foci of infection whether in the gums or in the impaction of a bowel or anywhere else in the system. It is imperative, therefore, that there should be sympathetic cooperation with the family physician, whose intimate knowledge of the patient and whose careful diagnosis of foci of infection other than those found in the mouth will greatly increase the percentage of successes and add to the permanence of the cures.

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[3] Allen: Vaccine Therapy and Opsonic Index, Blakiston, Philadelphia, 1913, p. 112.

Allen[3] speaks of the value of citric acid in 30-grain doses three times a day for the purpose of softening the lymph-wall around the foci of infection by reducing the agglutinative power of the blood. I have found this treatment of service, but give it in the form of an ounce of lemon juice three times a day, which is the equivalent of about 34 grains of citric acid.

I shall now report a few detailed cases.

Cases 1 and 2.—A young man with pronounced pyorrhea and several fistulas in the gums came to me so despondent that he thought he was going to die. Local treatment caused improvement, but two of the fistulas would not heal. An autogenous vaccine was made in March, 1912, from material obtained from the worst fistula. It contained only a single strain of streptococcus. After four injections, a week apart, the patient gained in weight and then started slowly to lose weight, but as he felt better and the gums improved, the treatment was continued until June, when there was a great improvement in the gums and both fistulas had healed. In the fall the patient returned and, as he and his family physician said that the vaccine had done him so much good, I made another vaccine from a small pyorrhea pocket and obtained four strains of streptococci and a *Staphylococcus aureus*. This treatment caused a complete healing of the mouth so that it was apparently absolutely healthy; the patient's skin cleared, he gained weight and felt, as he said, well. The mixed vaccine seemed most effective.

He begged me to give the vaccine treatment to his wife, who also was suffering from pyorrhea. She had almost the same experience, except that she did not gain weight (her weight was normal), but her mouth showed great improvement and she slept better and felt a great lessening of nerve tension.

Case 3.—A young woman was vaccinated with a Gram-negative bacillus, 50 million to the cubic centimeter, with some improvement, but not marked. Later a second vaccine was made of *Staphylococcus aureus* and *S. albus*. The gums showed marked improvement, but the soreness around two or three teeth still persisted; the skin generally, from being itchy and showing a tendency to pimples, cleared up and to her great delight remained sightly and comfortable.

Case 4.—Mrs. A., aged about 50, came to me with all the teeth loose, complaining of great fatigue, trouble with the eyes, constipation and a steady loss of weight. In six months the vaccine treatment had markedly tightened the teeth and her chronic fatigue and constipation were gone; the wrinkles vanished from her skin owing to an increase of weight from 115 to 127. Her eyes, she says, were so improved that she could readily read what before was impossible or accomplished with difficulty.

Case 5.—A married woman, aged 40, who had been under my local treatment for about two years took a vaccine last fall composed of a streptococcus. She had a complexion covered with red patches, gout in the right eye, hemoglobin 67 and great depression with constant fatigue. In six months the hemoglobin went up to 93, the gout disappeared from the eye, her complexion cleared and the gums made more progress than had previously been made in two years under local treatment. Her greatest satisfaction lay in the fact that she slept well, which prior to the vaccine had not been the case.

In three cases as the gums and abscesses healed marked redness of the nose disappeared. This was associated with great clearing of the complexion and a gain in weight. In other cases there was a consistent healing of the gums that seemed much more rapid than that usually obtained from local treatment alone, but with many of them the time is too short to be sure of a permanence in cure.

In one case that refused to yield either to local or vaccine treatment a tumor of the breast was discovered. Such a depressing focus was obviously a sufficient reason for the poor results obtained, and as the patient refuses to have an operation the prognosis is not good.

Vaccine treatment judiciously used seems to be so valuable in the cases of pyorrhea that it should, in my opinion, always be given a fair trial and always in sympathetic cooperation with the family physician.

1500 Locust Street.

ABSTRACT OF DISCUSSION

Dr. Thomas B. Hartzell, Minneapolis, Minn.: We sometimes cause deeper infection and greater disturbance, if treatment of the mouth is undertaken immediately prior to operation in other parts of the body. I am convinced that I have been responsible for bringing about two or three cases of pneumonia by disturbing areas of granulation tissue around teeth that needed care. Dr. Mayo, in a recent conversation, confirmed the idea that operative interference in mouths to clear them of bacteria immediately preceding great surgical operations, is an unsafe procedure. Treatment of the mouth should be accomplished by satisfactory measures two or three weeks before any extensive surgical operation is undertaken.

I believe that the bacterial vaccines should be used in conjunction with other measures, and that if used properly they have a vast field of usefulness.

Dr. Thomas L. Gilmer, Chicago: Referring to the benefit derived from antiseptic mouth-washes, I suspect that the mechanical cleansing of the teeth rather than the destruction of the bacteria by the medicament caused the improvement indicated. Bacteria are not destroyed by any germicide that I know of which is not also injurious to the mucosa of the mouth. Dr. Black recommends the use of a bulb-syringe with a moderately small nozzle for cleansing the interproximal spaces, especially when the gum septum is much destroyed by pyorrhea or otherwise. If considerable force is applied to the bulb, food and other debris is dislodged. This should be used only as an adjunct to the brush, silk floss and toothpick.

Dr. C. H. Oakman, Detroit: I am glad to know that those who spoke of vaccines do not hold to the use of vaccines alone, but believe in instrumentation. Dr. Head spoke about the use of peroxid of hydrogen. Three per cent. peroxid of hydrogen should not be condemned, but, as a rule, peroxid of hydrogen used in the mouth in stronger solution would be contra-indicated unless combined with lime-water or some other alkaline agent. I saw two patients in the hospital who were suffering from so-called rheumatism which involved principally the joints of the hands, wrists and elbows. Both had pyorrhea alveolaris combined with alveolar abscesses. One patient had been an invalid for several years. They were given pyorrhea treatment, which eliminated considerable of the infectious material; first stock vaccines and then autogenous vaccines were used with most excellent results. Within two weeks these patients showed marked improvement with regard to the mobility of the joints.

Dr. L. Duncan Bulkley, New York: I find the use of peroxid of hydrogen as a local remedy very satisfactory. I use it, first, in ordinary strength, increasing it, as necessary, even to full strength. I insist on slow and complete mastication, with some self-massage, as a means of promoting nutrition in the gums, and I am positive that all the cases in which this has been well carried out have been benefited, and the trouble has often been overcome. I never could see the sense in simply trying to relieve the trouble locally by cleaning out or disinfecting the socket of the tooth.

It is remarkable that the three or four places in the body that have the most micro-organisms—the scalp, the mouth, the scrotum and the vagina—are the places which yield best to surgical treatment. We all know how easily wounds in the mouth heal; wounds in the scalp are easiest to treat. There is something other than the simple action of organisms to be accounted for in pyorrhea, and we should always study the soil, or state of the system, on which they flourish; when this is in the best condition possible, a relatively small amount of local treatment acts efficiently.

Dr. Truman W. Brophy, Chicago: What has been said about infection would naturally make us extremely timid regarding operations in the mouth, if it were not for the facts that have been named by Dr. Bulkley. When one may operate in the mouth month after month without getting an infection, it impresses us with the feeling that, after all, these pathogenic micro-organisms are not so much to be dreaded as one would assume on general principles. We all know that we cannot remove them from the mouth by any kind of washing, irrigation or brushing; that they become imbedded in the mucosa in such a way often that their removal is absolutely impossible, and that even in the presence of pathogenic micro-organisms we do get good results without infection. We ought, however, to do everything in our power to make the parts as clean as possible. I think that it is wise, when possible, to irrigate the nose, mouth and pharynx prior to any operation in that field.

Dr. A. Parker Hitchens, Glenolden, Pa.: The discussion to-day indicates that we are at last getting away from the idea that bacterial vaccines alone can cure this infection. The reason we have local infections at all is because the bacteria have been assisted in some way to overcome the body's normal antibacterial forces. The assistance in pyorrhea comes through serumal calculi, tartar-plaques, foreign bodies and traumatism. The resulting inflammation apparently hinders the ready access of the normal curative substances in the blood and lymph to the organisms present. There is just about space enough between the cells constituting the inflammatory area for toxic substances to pass out into the tissues, but not sufficient room for antibacterial substances to get in; so that, even though the opsonic index is raised, no benefit results to the patient. The rational way, therefore, to treat an infection, the inception and continuance of which is facilitated by the presence of foreign irritating substances, is to remove the foreign bodies and possibly also the inflammatory tissue; in other words, local treatment must be resorted to.

Dr. Nelson T. Shields, New York: One point has been overlooked, and that is in regard to the saliva. After thorough prophylaxis and the removal of all the micro-organisms from the fermentation of food, you leave the mouth in a normal condition because the saliva counteracts all other acidity that forms when the saliva is normal. But for the saliva we would not have teeth very long.

A splint for holding loosening teeth should be so made that not only the saliva can circulate between the teeth just as well with the splint in place as without it, but also that the soft tissues will be protected. This is best done by extirpating the pulps from all teeth involved in the splint and, after thorough cleansing mechanically, asepsis being maintained, filling the canals with gold at their apices and with oxychlorid of zinc in the remaining portions. This being done the teeth can be prepared in such manner that the mechanism in the construction of the splint will allow the saliva to circulate between the teeth, which will keep the mouth normal. The extirpation of the pulps and canal-filling described will prevent the wasting of alveolar process and gums, which would certainly follow should this important point be overlooked.

Feeble-Mindedness.—The importance of this problem is recognized in an instant when we learn that at the very lowest estimate 25 per cent. of our criminals belong to this class. Perhaps 50 per cent. of our prostitutes are feeble-minded girls; the same is true of our paupers, our drunkards, our ne'er-do-wells; in fact, we now recognize that a large percentage of the various classes of people who make our social problems are *mentally defective*. Twenty-five per cent. is a minimum estimate, while it has been shown that in all probability 50 per cent. is much nearer the truth, and it may run even higher. A superintendent of one reformatory for men estimates that 75 per cent. of his inmates are feeble-minded; careful tests of the girls in a reform school have shown 72 per cent. feeble-minded. In fact, wherever there are any statistics, it invariably points to the higher figure.—H. H. Goddard, in *Illinois Med. Jour.*

A CASE OF CONGENITAL MYOTONIA *

G. W. BOOT, M.D.
CHICAGO

Although the subject is outside my specialty, the rarity of the disease and the lack of knowledge concerning it justify me in reporting the following case:

Family History.—Patient's father is alive and well, active physically and mentally. The mother died of hemorrhage following some abdominal operation, at the age of 28. Father and mother were first cousins. Patient's father married again and none of the children by the second marriage are afflicted with the patient's disorder. The patient's paternal grandfather died at the age of 60 of spinal meningitis, and his paternal grandmother died aged about 35, from causes unknown to the patient. The maternal grandfather is alive and well, though slightly troubled with asthma, and the maternal grandmother died at the age of 55 from causes unknown to the patient. The patient's mother suffered from a disorder similar to his. This is shown by the disinclination she manifested toward going up and downstairs; the patient also finds this difficult and rather dangerous.

She had three children—all boys. The first died when about 8 years old and showed no signs of any similar trouble. The second child was 2 years older than this patient and manifested the same symptoms, having many falls as a child. He had an unusually active mind and studied hard in college subsequent to an attack of scarlatina. Following this he had a mental breakdown and was placed in a private sanitarium, where he died. The post-mortem examination which I made showed nothing externally beyond an unusually good muscular development and a few slight abrasions. At this time I knew nothing of his peculiar symptoms, so no muscle was removed for microscopic examination. When the skull was opened the calvarium was found thin and translucent in two places just outside the sagittal suture, about where it crosses the coronal suture. The dura was congested in those portions which corresponded to these areas, and was densely adherent to the deeper structures as well as the cortex. Except for this area of adhesion, the brain appeared normal. There was no fracture of the skull; the frontal sinuses and the temporal bones were normal. The lungs were found darker than usual. Over the upper lobe the right lung was adherent to the back of the chest, and the lower lobe adhered to the diaphragm, while the left lung was normal throughout. All the other thoracic and abdominal organs were found to be normal. Death had apparently occurred in a convulsion.

Personal History.—The patient, E. H., aged 21, is the youngest of the three children. His trouble began early in life. He remembers that at the age of 5 he had difficulty in arising from a sitting to an erect position, particularly if he had been sitting on the floor. His muscular trouble has caused him many falls. At the age of 12 he fell about 15 feet, struck on his head in the left temporal region, was unconscious for about twenty minutes, and after the fall could not see for about an hour. This was purely an accident and not the result of the myotonia. At the age of 14 he fell backward down the basement stairs, striking the back of his head on the cement floor, but was not injured. This fall was caused by loss of balance and inability to regain it on account of muscular spasm. At the age of 15 he fell forward on the same stairs. This time he fell like a log, toppling over with all his muscles rigid. He struck on his forehead and was unconscious for a short time, after which an abscess in the frontal region and many headaches developed. He has had chicken-pox, mumps and scarlatina, the latter at the age of 13.

Present Condition.—He has the typical state of myotonia, that is, when his muscles have rested and then are contracted, particularly if they are suddenly contracted, they are thrown into a tetanic condition, from which they do not relax promptly. If he rises from a chair after sitting for a short time his muscles contract and he cannot walk. Sometimes this condition of spasm will last for a minute or more. As a boy he could not take part in races or ordinary athletic games because he could not start quickly. When he got into fights he would always be thrashed before he could get into action. At one time he attended military school and found great difficulty in going through the prescribed tactics. After motion of the muscles is established he can move quite rapidly, but great resistance must be overcome before movement is secured. Going up and downstairs is perhaps the most difficult of all actions for the patient to perform, unless it is getting out of bed in the morning. After a night's rest he has much difficulty in rising. As his arms are less affected than his lower extremities, he first gains support on one elbow, then on the other, and so gradually gets control of muscle action. Cold weather has a marked influence for the worse on his condition. He tires more easily than ordinary persons, presumably because the spasm of the muscles causes more fatigue products to form, and in consequence he seems to require more sleep than the average individual. While the myotonia affects all the voluntary muscles to a greater or less degree, it is more marked in the lower extremities. It appears to be a true hypertrophy, for the muscles are firm and not soft or flabby. He must exercise extreme care when crossing busy streets, for if he were about to be run down by some vehicle he would be unable to move with sufficient speed to get out of the way. It is impossible for him to get on or off a street-car while it is in motion, partly because he cannot move quickly and still maintain his balance and partly because he cannot release the hand-rail promptly.

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* Presented before the Chicago Neurological Society, Feb. 20, 1913.

Examination.—The myotonia appears in the ciliary muscle to a slight extent, for he apparently experiences some slight difficulty of accommodation in looking at objects which are at different distances. If he looks steadily at a near object and then suddenly at a distant object there is a temporary blurring of vision. There is apparently a slight tardiness in response in the muscles of the eyelids. The myotonia is very marked in the masseter muscles. If he bites forcibly these muscles do not relax at once, but there is a considerable interval before he can open his mouth wide. No difficulty could be demonstrated in the muscles of the tympanum. The heart sounds are normal except that they appear rather loud. Any sudden alarm has a marked influence on the pulse-rate, increasing it greatly. The pulse-tracings show that exercise produces an unusual increase in the upstroke of the sphygmogram. "Stretching" causes a marked increase in the pulse-rate, but the blood-pressure is normal. Speech is rather hesitating. Whether or not this is due to an effort to get the muscles of speech in action I have not determined. It seems to me rather to be of mental origin. The diaphragm participates in the spasm, for after a strong exhalation in coughing or sneezing he cannot at once inhale. At times this causes dizziness. He has never become unconscious from spasm of the respiratory muscles. The deep reflexes cannot be elicited. I could find no jaw-jerk, elbow-jerk, wrist-jerk, knee-jerk or ankle-jerk. Light stroking of the abdomen elicited no response. The cremasteric and plantar reflexes are present. His troubles do not increase with age. No electrical tests have been made.

This case brings up several important problems for this young man. What are the chances of his transmitting this disorder to posterity if he were to marry? The condition of the sexual organs appears to be normal. Another problem concerns the occupation he must follow. Ordinary labor is out of the question, as he tires too easily and he cannot move quickly. The upper extremities being less involved than the lower, it seems to me that some occupation would be most suitable in which the chief muscular demands were made on the upper extremities. Also as regards life insurance, and in particular accident insurance, such an applicant would be a poor risk. Whether the disorder will shorten his life, except by accident, is problematic. What of his mental condition? Is there any danger of his becoming insane? His brother's affliction in this respect seemed to be closely connected with the results of the trauma he suffered to his head.

Among the questions of scientific interest that arise are the following: Where is the seat of the lesion or malformation causing this trouble? Is it in the nervous system or in the muscles? What is the relationship of this disorder to pseudohypertrophic muscular paralysis? Is the myotonia in any way related to tetany? Has it any connection with deficiency or perverted action of the secretion of the ductless glands? Does his metabolism differ from that of the ordinary individual?

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ENTEROLITHS

REVIEW OF LITERATURE WITH REPORT OF CASE

Frederic D. H. Coerr, M.D., New York
Assistant Visiting Surgeon, Fordham Hospital

A tentative diagnosis of enterolith has probably been made frequently, only to be disproved at the time of operation. Conversely, most of the enteroliths reported have been discovered in exploratory laparotomies or on the post-mortem table.

The rarity of the condition is no reason for not bearing it in mind when endeavoring to determine the nature of some obscure abdominal condition, with or without intestinal obstruction.

It is self-evident that no classical picture can be drawn, as the signs and symptoms vary with the size, character and origin of the enterolith and its location in the alimentary tract, which may be anywhere from the stomach to the rectum. The diagnosis, therefore, is one which must be made chiefly by elimination, with the assistance of the laboratory and the Roentgen ray.

A positive, preoperative diagnosis may not be essential in all cases, but in some it would have prevented a fatal outcome, and in others saved years of distress and invalidism.

To stimulate a possible interest in this condition and to place on record one of these surgical curiosities, I submit the following brief review with the report of a case which I treated.

We are all more or less familiar with the hair-balls found in the stomach and intestines of the herbivora and in animals which have the habit of licking their coats, as well as the coats of their fellows. These frequently attain considerable size, and are composed of hair and husks, matted together with hard fecal matter. These are true enteroliths of fecal origin, and although common in animals, are rarely found in man.

Oriental bezoars[1] formerly, and possibly now, of medicinal use in certain countries, are intestinal concretions which probably were formed in *Capra aegarus* and *Antilope dorias.* They are usually spherical or oval, of a dark olive-green color, due to biliverdin, with a smooth, shining exterior, and composed almost entirely of lithofellic acid.

False bezoars, which come from the Eastern countries, have a brownish-black color, and are composed chiefly of ellagic acid, probably derived from the tannin contained in the food consumed by the animals which yield them.

Many foreign substances find their way into the human intestinal tract, but it is rare for any of them to form a nucleus of a concretion of sufficient size to cause intestinal obstruction, unless per chance it lodges in a Meckel's diverticulum or in some pouch of the intestines, as in the case reported by D. M. Greig,[2] in which the obstruction was relieved by the spontaneous evacuation, through an umbilical fistula, of an enterolith 2½ inches in circumference and weighing 24 gm. This may have been a true enterolith, but more probably it was a phosphatized gall-stone; since, judging from all the cases reported, gall-stones are found to be the most frequent cause

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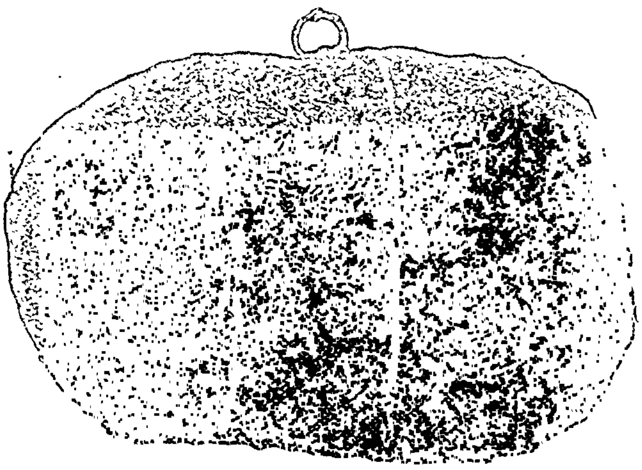
1. Smith, E. E.: Reference Handbook of Medical Sciences, 1901, iii, 231.
2. Greig, D. M.: Lancet, London, Dec. 3, 1910, p. 1613.

of intestinal calculi in man. They may remain in the intestine for years, causing no trouble until, gradually increasing in size by accretion or being reinforced by accumulation of other stones, they give rise to symptoms of obstruction, either partial or complete.

U. Gabbi[3] reports a case of this kind in a peasant, aged 45, who, one and one-half years after an attack of hepatic colic, was suddenly seized with a violent pain in the right inguinal region, followed by nausea and vomiting. The pain became rapidly more severe and generalized; the abdomen greatly distended, accompanied by tenesmus without evacuation. Temperature only slightly elevated and pulse accelerated. Purgatives and enema relieved the distention sufficiently to disclose in the region of the ileocecal valve a palpable, freely movable tumor with a hard nodular surface. Later, a hemorrhagic exudation occurred in the peritoneal and pleural cavities. This was removed by aspiration. Stools became normal, but urine contained much urobilin. Patient began to recover and left the hospital, but, according to his story, entire restoration to health came only after a chestnut-sized, whitish stone had been evacuated in a stool, followed by eight bean-sized stones and about fifty small stones.

According to Gabbi, the large number and small size of most of the evacuated stones exclude a diagnosis of enterolith of the feces. Since an attack of hepatic colic had previously occurred, it is probably that these gall-stones had remained in the intestines for a year and a half, and only after that period had given rise to the preceding symptoms. It is a fact that gall-stones, during a protracted stay in the intestines, become phosphatized and adopt the characteristics of true enteroliths. It is also a fact that gall-stones may more or less completely close the intestine and thus produce attacks of severe intestinal colics, especially if they lodge in large numbers in the narrow portion of the ileum, just above the ileocecal valve. Gabbi attributes the hemorrhagic quality of the exudate to previous malarial attacks.



Enterolith, measuring 15.4 by 12 by 10 cm. and weighing 945 gm.

J. H. Miller[4] reports a case of obstruction of the bowels by enterolith, composed of a phosphatized gall-stone. Recovery in this case also occurred after passing the stone by the rectum. The specimen weighed 183 gr. and measured 1¼ inches in length and 1 inch in width.

The case of Wiltshire,[5] also caused by gall-stones, is interesting in that the accumulated mass caused displacement of the kidney, which was relieved by operation.

The ingestion of large quantities of fruit with indigestible skins and seeds may give rise to a form of enterolith, or "gastrolith," as C. H. Cargile[6] more properly calls it, for the mass accumulates and remains in the stomach. He reports two cases, in which what was practically a cast of the stomach was made by a mass of persimmon skins and seeds. He also refers to two other similar cases, showing that this condition may not be uncommon in the South.

There are also found in the intestines and sometimes in the stools small concretions whose central mass consists of undigested food residue or inspissated mucus, while the bulk of the material is composed of ammonium magnesium phosphate, or perhaps magnesium phosphate, but may include calcium phosphate or carbonate and occasionally calcium and magnesium soaps and albuminous matter.

E. Deetz[6] and C. H. Bedford[7] report cases of intestinal sand. A distinction is made between "true" and "false" intestinal sand. The latter owes its origin to undigested vegetable particles, occasionally coated with earthy salts. "True" intestinal sand is found chiefly in gouty patients and is composed mostly of lime salts. Bedford attributes this fact to the long-continued milk diet given in such cases.

The only true case of fecal enterolith that I can find in the literature since 1899 is that of Ferguson and Reuter,[8] and as the history resembles in certain respects that of my case, I shall give a brief resumé.

Ferguson and Reuter's Case.—Mrs. J., aged 30, multipara, housewife, was admitted to Dallas Hospital Jan. 3, 1903. Since 10 years of age she had suffered with severe paroxysmal colic. She remembers at that time a small lump the size of a marble on the right side. This has never disappeared, but has gradually increased in size. Twelve years ago, at the age of 18, she was operated on in a Tacoma Hospital for tumor, but this was not removed. She was later informed that the intestines were too much involved to permit such a procedure.

On admission she had colicky pains in right hypogastric and inguinal regions, obstinate constipation, headache, nausea and vomiting. The abdomen was rigid and greatly distended.

Jan. 16, 1903, after treatment by ice-bags, purging, enema, etc., the abdominal distention was sufficiently relieved to disclose a hard mass the size of a pear, freely movable within the intestine. Owing to its extreme hardness, a foreign body was suspected and a tentative diagnosis of enterolith was made. This was proved correct at operation, when the mass was found lying in the lumen of the ileum, about 15 inches from the ileocecal valve. Above the mass the intestine was dilated to twice its normal caliber and below contracted to one-third its normal size. The mass lay in a symmetrical, fusiform dilatation of the intestine, in which it was quite freely movable, acting as a ball-valve.

The specimen weighed 3½ ounces and measured 2½ inches in width and 3½ inches in length. It was composed of vegetable matter and salts with what appeared to be a large hazelnut nucleus. Recovery was uneventful.

My case reported below presents several interesting features, that is, the size and character of the enterolith, the absence of intestinal obstruction at any time, the symptom-complex leading to a mistaken diagnosis, the age and mental condition of the patient and her subsequent history.

Author's Case.—D. K., Russian, aged 17, single, shirt-waist maker, was admitted to the service of Dr. Taylor at Fordham Hospital on July 12, 1912. Nothing could be learned of her family history. Her parents were of the very poor peasant class of Russia.

Personal History.—The patient recalled no diseases of childhood, but had always been anemic and weak, with poor appetite and constipated bowels. Menstruation began one year ago, her periods being irregular in duration and occurrence and accompanied by severe pain. Patient lives in a poor hygienic and moral environment. At the age of 10 she first noticed a swelling of the abdomen in the hypogastric region. This tumor has gradually increased in size, has caused no pain, but at intervals has been slightly tender. Up to four months ago she had suffered from severe constipation, but since that time she has had large and copious movements. Her menstruation ceased entirely four months ago. She has had no vaginal discharge or uterine pain; denies sexual intercourse. There

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[3] Gabbi, U.: Clin. med. ital., 1899, xxxviii, 536.
[4] Miller, J. H.: Med. Fortnightly, December, 1901.
[5] Wiltshire, James G.: Virginia Med. Semi-Month., June, 1902.
[6] Deetz, E.: Deutsch. Arch. f. klin. Med., 1901, lxx, 365.
[7] Bedford, C. H.: Brit. Med. Jour., Dec. 6, 1902, p. 1761.
[8] Ferguson and Reuter: Med. Sentinel, Portland, Ore., September, 1903, p. 499.

New and Nonofficial Remedies

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

ANTIMENINGOCOCCUS SERUM.—(See N. N. R., 1913, p. 215.)

Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

Slee's Antimeningitis Serum.—Marketed in vials containing 20 Cc.

ANTISTREPTOCOCCUS SERUM.—(See N. N. R., 1913, p. 216.)

Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

Slee's Antistreptococcic Serum.—Marketed in vials containing 10 and 20 Cc.

Therapeutics

MORE IMPORTED (CANNED) MEDICATION

The prescriptions herein noted are criticized because they are considered by our medical journals of sufficient importance to be quoted[1] from French journals. Let us hope that such quotations will soon cease. The following combination is recommended to be given in "gouty migraine":

"℞ Extracti colchici cormi		
Quininae sulphatis	ãã gr. xlv	(3 grammes)
Pulveris digitalis	gr. xxiii	(1.5 grammes)

M. Fiant pilulae No. xxx.
Sig.: One pill every evening."

Whether or not digitalis is advisable in gouty conditions is entirely dependent on the condition of the heart, and its use should not be advised without distinct statement of the conditions in which it is indicated, as many times digitalis is absolutely contra-indicated in gout.

The advisability of increasing the circulation in the brain by the use of quinin in gout might be seriously questioned. If the patient was plethoric, or had high blood-pressure or headache, quinin would seem inadvisable. Of course, it should be noted that the actual dosage here given is small, that is, 0.1 gm. (1½ grains) of quinin once a day, and it might not in this amount, cause any cerebral disturbance.

The value of 0.1 gm. (1½ grains) of the extract of colchicum root once a day is mythical; in fact, it is doubtful whether or not colchicum has any real value in chronic gouty conditions. In acute gouty conditions it seems to be of little value unless it produces free movements of the bowels. When colchicum is not prescribed in sufficient amount to cause free movements of the bowels, it is often combined with salicylic acid in some form, and it is the salicylic acid that is of benefit, although such benefit is often attributed to the colchicum.

Another prescription recommended "for the relief of acute attacks of gout" is the following:

"℞

Quininae sulphatis		
Fluidextracti aconiti	gr. xlv	(3 grammes)
Extracti colchici cormi	♏ xx	(1.3 grammes)
Extracti belladonnae foliorum	gr. viiss	(0.5 gramme)
	gr. iii	(0.2 gramme)

M. Fiant pilulae No. xx.
Sig.: From one to four pills a day."

If aconite is to be of any value in a condition of acute gout, the preparation which is used must be an active one, and its administration must be pushed until its physiologic action is evident. To obtain the safe activity from aconite in such conditions as are present in acute gout it should be given in solution, and uncombined with other drugs, so that its use may be stopped as soon as there is evidence of its full physiologic action.

If one thinks that colchicum is of value in acute gout, its administration also must be pushed, and certainly one pill a day (although a latitude of from one to four pills a day is allowed) would be useless.

If quinin is of value in gout, let it be given alone, that its value may be demonstrated. Theoretically, a patient suffering from acute gout, if given quinin in doses of any amount, would have unpleasant cerebral disturbances added to his discomfort. There is no apparent physiologic or rational excuse for giving quinin to combat acute gout.

Of course, it is immediately conceded that belladonna, alone or in combination with aconite, would cause an abatement of peripheral pain; such treatment is not new. The only novelty is in the combination offered, and, since simplicity of medication is a desideratum and therefore each drug prescribed should have positive value, the quotation of so doubtful a mixture cannot be excused.

Again, from France come prescriptions for chorea. The writer quoted makes some good suggestions in regard to the general treatment of such patients, both in mild and in severe cases of chorea. He advises, "in mild cases," the following prescription:

"℞

Antipyrinae		ʒ iiss	(10 grammes)
Tinoturae belladonnae *foliorum*		♏ xl	(2.25 grammes)
Syrupii aurantii florum		℥ ii	(60 grammes)
Aquae destillatae	q. s. ad	℥ v	(150 grammes)

Misce."

Why is it necessary to tell an American physician that antipyrin can be dissolved *in syrup of orange flowers* and distilled water? *Instruction to this effect may be given to second-year medical students; it is not necessary to copy such suggestions from France.* The nonsense of prescribing distilled water should be emphasized, as investigations have many times shown that the distilled water of the drug shops contains more bacteria than ordinary water. If antipyrin is good treatment in chorea (and it may often be of value) let it be so stated, and the proper dose suggested.

The susceptibility of some persons, even children, to poisoning from belladonna should forbid its use in any such mixture as the preceding. Two very active drugs should rarely be combined in a mixture, as it may be wise to increase the dosage of one drug and to diminish that of the other. Belladonna could be ordered separately in the amount deemed advisable.

The writer quoted goes on to state that if the antipyrin does not prove successful in chorea, hydrated chloral in full doses should be given, and the following prescription is quoted:

---

[1] Prescriptions quoted appeared in New York Med. Jour., Oct. 11, 1913; Oct. 25, 1913.

"℞

Chlorali hydrati		ʒ ss-i	(2-4 grammes)
Potassii bromidi		ʒ ¼-ss	(1-2 grammes)
Codeinae sulphatis		gr. ⅔	(0.04 gramme)
Syrupi		ʒ v	(20 grammes)
Aquae destillatae	q. s. ad	℥ iiiss	(110 grammes)

M. Sig.: To be taken within twenty-four hours in tablespoonful doses."

To give hydrated chloral in severe cases of chorea is not new, neither is its combination with potassium bromid. To be compelled to give codein to a violent choreic patient is not a novelty. It is bad treatment to combine these three active drugs in one prescription. It certainly is not necessary to tell American physicians that these very strong depressomotors and narcotics may be given, if need be, to choreic children. Such "canned medication" as this is beneath the dignity of our best medical journals. The statement could be made that in severe chorea the physician may resort to chloral, bromids or codein, and the reader's intelligence would not be insulted.

Another instance of imported medication may be given. A physician of note (else he would not be quoted), while discussing the subject of "cardiac disturbances in chronic dyspepsia," advises in the treatment of palpitation, intermittencies, tachycardia, bradycardia, pseudo-anginal attacks, etc., besides a proper arrangement of the diet, the following prescription for constipation:

"℞

Fluidextracti frangulae			
Fluidextracti rhamni purshianae,	āā	ʒ vii	(25 grammes)
Glycerini		ʒ x	(40 grammes)

Misce."

The criticism of this is simply that any physician knows enough to give a laxative without being furnished with a special prescription copied from Europe. Also, some pleasant-tasting, active preparation of cascara is just as good as this combination, or better. The action of frangula is similar to that of rhubarb, but is much harsher. The advised dose of the fluidextract of frangula is not far from 22 minims, while the Pharmacopeia gives 15 minims as the dose. The same dose of the fluidextract of cascara is prescribed; and both are to be administered in glycerin, which, unless well diluted, may produce nausea. The advice is given that a teaspoonful of this mixture be taken "in a little water" at bedtime. This prescription is unnecessarily disagreeable, and might easily act to the patient's disadvantage.

The next suggestion is that "a cool, moist compress, covered with some impervious material may be left on the epigastric and precordial regions over night." The particular one of the preceding cardiac disturbances for the relief of which this application should be made is not specified: Clinically, most patients with tachycardia or pseudo-anginal attacks will not allow any such application over the heart.

One pill made by the following formula is recommended to be taken at night:

"℞

Extracti hyoscyami			
Fluidextracti valerianae			
Zinci oxidi	āā	gr. 4/5	(0.05 gramme)

Fiat pilula No. i."

The extract of hyoscyamus furnishes an atropin treatment. As the particular cardiac disturbance under treatment is not stated, one must object to the use of any form of atropin in palpitation or tachycardia, as in some persons atropin will cause an increased heart activity. The value of valerian is mythical, as has been repeatedly stated in these columns. In fact, it is doubtful if valerian has any activity whatever, except as a carminative. Zinc oxid should not be used internally.

The quotation states in addition that when cardiac discomfort occurs, an ointment, recommended by another noted European clinician, should be lightly rubbed over the precordium. The variety of cardiac discomfort is again not stated. Perhaps such specification is superfluous. The prescription follows:

"℞

Veratrinae	gr. iiss	(0.15 gramme)
Extracti opii	gr. xii	(0.75 gramme)
Olei terebinthinae rectificati	ʒ ss	(2 grammes)
Olei menthae piperitae	gtt. xii	
Adipis lanae hydrosi	℥ i	(30 grammes)

Misce. Fiat unguentum."

It should be noted that veratrin ointments are dangerous; both to the one on whom they are used and to the one who applies them. The value of the extract of opium when so used is probably nil. The turpentine would irritate, the peppermint would irritate and the veratrin might irritate. The opium and the wool-fat should be sedative. It is a question whether this ointment "lightly rubbed" on would irritate or soothe. Such a prescription should not be ordered.

The further advice is given that the patient with this cardiac discomfort should take a tablespoonful of the following sedative preparation every hour until the attack ceases. Again it is not stated for what kind of an attack the mixture is prescribed.

"℞

Potassium bromide			
Cherry-laurel water	of each	ʒ iss	(6 grammes)
Syrup of ether		℥ i	(30 grammes)
Valerian distillate		℥ iiiss	(110 grammes)

Mix and make into a solution."

This prescription from the standpoint of American medication, the preparations presumably being founded on the United States Pharmacopeia and National Formulary, is the limit of imported canned advice. An explanatory paragraph does state that the "syrup of ether contains 2 per cent. of ether and 5 per cent. of alcohol." The "valerian distillate is made by macerating one part of valerian with eight parts of water for twelve hours, distilling, evaporating to four parts, and filtering." Of course, it stands to reason that either the patient's first attacks of heart disturbance would be relieved or the patient would be dead before such a preparation could be made. But what valerianic nonsense! And just think of the odor of that drug shop during the preparation of this valerian distillate!

The syrup of ether is perhaps stimulant; it certainly is not sedative; and again we have this everlasting dash of cherry-laurel water. Will Europe ever cease worshiping at this shrine?

Last of all comes good old potassium bromid, which any physician on this side of the water would use, if he thought the indications called for it, without this elaborate quotation. The dose of the bromid offered is about 10 grains, and is administered every half hour until the attack ceases. Bromids are slow-acting drugs, and while the initial dose is small, if the heart did not soon right itself, a large amount of bromid would soon be circulating in the patient. It is better, when bromids are indicated in cardiac disturbances, to give a dose considered sufficient, and then to wait a number of hours before further administration, until the drug has had time to act.

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SATURDAY, DECEMBER 20, 1913

THE RESISTANCE OF VARIOUS NERVE-CELLS TO ANEMIA

The nervous system of higher animals is exceedingly sensitive to anemia or other physiologic conditions which involve a local lack of oxygen. Muscle tissue which has been supplied inadequately with this essential element or perhaps completely deprived of it for not inconsiderable periods of time may still show a satisfactory recovery of contractile power when the circulation is suitably restored and the resuscitating oxygen reaches the asphyxiated tissue-cells, but this is not the case with the nervous tissues. The nerve-cells of different classes and positions show differences in sensitiveness to anemia. Those of the cerebrum and cerebellum are unquestionably most readily damaged by oxygen starvation. There is evidence to show, for example, that eight minutes of complete anemia may permanently eliminate the function of some of the cells of the cortical areas. If the blood-supply there is wanting for more than twenty minutes it is rarely possible to discover restoration when the circulation is reestablished. In descending to the lower levels of the cerebrospinal nervous system the resistance to the detrimental effects of anemia or the immunity from permanent damage by lack of oxygen increases appreciably. In sequence the cells of the spinal bulb, the spinal cord and the spinal ganglia, respectively, appear to withstand anemia for longer and longer periods, so that a cessation of the circulation for eight or ten minutes may be of minor significance and permit of prompt complete recovery when the blood-supply is restored. Anemia of the spinal cord for an hour, however, is reported to be sufficient to cause necrosis of all the nervous elements.

A growing appreciation of the foregoing facts helps to explain the unfortunate outcome of conditions, as for example those following the oxygen starvation induced by carbon monoxid or coal-gas poisoning, in which there is acute oxygen want. Certain resulting permanent paraplegias are included in this group. The permanent disastrous results of oxygen want in the nervous retina induced by obstruction of the retinal vessels belong in the same category. Whether there are other neurons in the body which have a greater hardiness than those of the cerebrospinal axis, as just cited, has not hitherto been determined, though there have been intimations that some of the outlying cells, such as those of the sympathetic ganglia, are more stable in the absence of their blood-supply.

The persistence with which portions of the small intestine will exhibit rhythmic contractility long after their removal from the body, if they are treated with an oxygenated restorative like warmed Ringer's solution, suggests that their nervous supply, or more specifically the cells of the myenteric plexus, are exceptionally resistant to anemia. The basis for this assumption of survival of the nervous elements is the generally accepted evidence that rhythmic contractions of the alimentary canal do not occur if the plexus is wanting.[1] Quite apart from the purely theoretical aspect of the question, the determination of the degree of resistance of the intrinsic neurons of the alimentary tract to anemia and their limits of endurance are of interest in connection with the possibility of continued functioning after the interference with the circulation in surgical states such as hernia and intussusception.

An experimental inquiry conducted in the Harvard laboratory of W. B. Cannon, to whom we are already indebted for some of our fundamental knowledge of the alimentary tract, has furnished the basis for an intelligent appreciation of the points at issue in relation to the intestine.[2] According to these findings, if the vessels supplying parts of the alimentary canal are ligated, the tissues become edematous and purple, but may not be completely anemic. After this condition has persisted for six or seven hours such regions may recover normal activities, and, on being examined histologically, show nerve-cells with normal appearance. If complete anemia is produced by suitable compression, the condition may last as long as three hours and normal motility may still be restored. A persistence of compression anemia for three and one-half hours or longer, however, almost invariably results in loss of function and disappearance of nerve-cells in the compressed parts.

Cannon and Burket point out that the continued existence of the cells of the myenteric plexus after three hours of complete anemia — two hours longer than the cells of the sympathetic ganglia — reveals them as the most hardy nerve-cells thus far found in the body. Incidentally, it is worthy of emphasis that the concomitance of persistence or loss of function with persistence or destruction of nerve-cells lends new support to the contention that the spontaneous contractions of the alimentary canal are of nervous origin.

THE WASHINGTON ANTIVIVISECTION CONGRESS

The third Antivivisection and Animal Protection Congress has been in session in Washington during the past week. As the name indicates, the congress has represented two interests. So far as it was an animal protection congress, all could heartily support it, even the "vivisectors" themselves, for no men have done more to protect animals from pain and disease than they. But so far as it was an antivivisection congress it was hostile to the very means which have proved most potent for alleviating the suffering of man and the lower animals as well. Under these circumstances it is impossible to judge the value of the lists of bishops, generals, senators, clergymen, governors, members of Congress and other public men widely advertised as vice-presidents of the congress, because it is impossible to know on which aspect of this two-faced organization they were looking when they permitted the use of their names.

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[1] Magnus, R.: Arch. f. d. ges. Physiol., 1904, cii, 362.

[2] Cannon, W. B., and Burket, I. B.: The Endurance of Anemia by Nerve-Cells in the Myenteric Plexus, Am. Jour. Physiol., 1913, xxxii, 247.

Most prominent among the foreign members was the founder of these congresses, the widely heralded Miss Lind-af-Hageby, whose false statements a decade ago cost Coleridge $25,000 in his suit with Bayliss, and whose attempt this year to refute the charges that she was "a deliberate and systematic liar, and that her antivivisection propaganda had been carried on by a systematic campaign of falsehood," resulted in a prompt verdict against her. Her present contention is that more is to be expected for human life and welfare from hygiene and sanitation than from drugs and surgery. That practically all the modern practice of hygiene and sanitation is firmly based on the results and methods of "vivisection" is a fact which she seems to have overlooked.

The Rockefeller Institute, which in the short period of its existence has given the medical profession an effective means of combating cerebrospinal meningitis, a new method for the diagnosis of syphilis and devices for artificial respiration in anesthesia and shock, not to mention other important discoveries, was the chief target for vilification. It was designated by various speakers as a "chamber of horrors," as a "working model of hell," and as the crown of a "toppling mass" of wealth, "tainted by lying, stealing, arson and murder."

The most sensational claim made at the meeting was that not uncommonly physicians inoculate unsuspecting persons, often children and other dependents, with the germs of disease, solely for experimental purposes. This statement has been published with big head-lines in newspapers in all parts of the country. The evidence for it consisted in citing once more instances which have repeatedly appeared in antivivisection literature, and have repeatedly been shown to be false or without professional support. The "poisoning" of insane patients with thyroid extract was again mentioned, although the crafty deception in this charge has been made clear at least twice in the past twelve years.[1] The spraying of the nose and throat of patients with "poisons of diphtheria, small-pox, scarlet fever or consumption" was again instanced, although it has been disclosed that the person who confessed to having done this had also confessed that he had no standing in the medical profession, and, indeed, was quite in agreement with many antivivisectionists in disbelieving that bacteria cause disease.[2] The use of luetin was again described[3] as the "inoculation of the germs of a vile incurable disease," although it has been carefully shown that luetin was first proved wholly innocuous by injections into animals and into the discoverer himself, as well as into other physicians who volunteered for the test, and not until then was used for diagnostic purposes.

The public should definitely understand that the medical profession wholly repudiates and regards with abhorrence the employment of any procedure whatever which is in any way likely to injure rather than to benefit a patient who has entrusted himself, or who has been entrusted, to a physician's care. Such action would be absolutely at variance with the prime object of medical service—the welfare and the restoration of the sick.

Fortunately, the lay press is beginning to understand the unreliability of antivivisectionist assertions. Various papers have commented on the "virulence and nonsensical folly" of the misstatements and misrepresentations of antivivisectionists, have recognized them "as peculiarly impervious to the facts," have asserted that they "wilfully hide the serious purpose underneath the experiments on animals," or have flatly declared that they are "promulgating the most outrageous falsehoods about men whose lives are devoted as unselfishly and as efficiently to the service of humanity as any that could be mentioned." Even one of the speakers at the congress was moved to urge his hearers to "stick to the facts" and to "cease making wild statements which they could not prove." Let us hope that some day they may do so.

IN WHAT FORM ARE PROTEIN DIGESTION PRODUCTS ABSORBED?

The idea that the products of the digestion of protein are regenerated into blood proteins as they pass through the alimentary wall in the course of their absorption has so long dominated the teaching of physiologists that it has not been easy to become adjusted to an entirely new doctrine in respect to the fate of these foodstuffs. The stubborn facts against which all attempts at theorizing have sooner or later stumbled are that ingested proteins disappear from the lumen of the digestive tract somehow in the course of alimentation; their nitrogenous end-product, urea, appears in a few hours in the urine; and what happens to bridge the gap between the beginning and end of this important chapter in physiology has almost completely eluded discovery, and therefore given room for a play of speculation.

It was as easy as it was inconclusive to assume that a portion of the food proteins or their derivatives may be built up in the cells lining the alimentary canal to form blood proteins, so that this organ would have to be regarded as an important blood-forming organ. The other extreme of hypothesis found its expression in the view that probably a major portion of the protein does not reach the tissues at all as a nitrogenous compound, but undergoes deamination in the intestinal wall, the nitrogen being rapidly carried by the portal circulation to the liver and converted into urea, and thereupon excreted by the kidneys, while the non-nitrogenous moiety is carried to the tissues, to which it serves as an important and ready source of energy. If we seek for the underlying reason why recourse was had to either of the preceding assumptions (for which it must in fairness be admitted that there was something more than speculative justification), it doubtless rests in the fact that no convincing evidence of the presence of nitrogenous digestion fragments in the blood after a protein meal was forthcoming. Every now and then some one announced the discovery of them, only to have its reality denied in a succeeding publication. So competent a chemical investigator as Abderhalden has in the past been unable to admit that nitrogenous protein digestion derivatives are present in the blood in amounts indicative of any routine physiologic function.

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[1] Cannon, Walter B.: Characteristics of Antivivisection Literature, Critic and Guide, February, 1911; Defense of Research Pamphlet XIX, p. 10.

[2] Life, May 26, 1910.

[3] Jour. Zoöphily, 1913, xxii, 4.

The aspect of the subject has become changed, however, by the advent of new and more delicate methods of blood analysis. To some of these reference has been made here in the past.[1] The earlier work of Delaunay[2] was followed by the noteworthy experiments of Folin and Denis[3] and of Van Slyke and Meyer,[4] all indicative of an indisputable absorption of amino-acids as such from the alimentary tract. This evidence that the protein products truly reach the blood-stream as amino-acids and are presumably carried to the tissues where they may be reintegrated into the proteins characteristic of each tissue or finally disintegrated with resultant production of the end-product urea has again been strongly fortified by new contributions from London's laboratory in St. Petersburg.[5] These show that only a few minutes after the introduction of an amino-acid like alanin into the intestine an increased content of aminonitrogen is detectable in the blood of the jugular vein, that is, the general circulation. Furthermore, during the digestive cycle in animals the proportion of aminonitrogen increases not only in the portal blood, but also in the peripheral circulation — less, as a rule, in the latter than in the former. Such evidence must be taken as an unmistakable indication of the current drift. The amino-acids are absorbed as such; and so they play their rôle in the nutritive processes. It has at length become necessary to readjust our theories to the facts of experiment and observation.

OCCURRENCE OF TUBERCLE BACILLI IN THE CIRCULATING BLOOD

A great deal of work has been done during recent years on the question of the occurrence of tubercle bacilli in the blood of tuberculous patients. Two methods have been used, namely, the direct examination of the blood in stained preparations and the inoculation of guinea-pigs with blood. The results obtained by different investigators are in each case widely divergent, some having high percentages of positive results, others almost or wholly negative results. Some even report finding bacilli in the blood of healthy persons, who at least were not suffering from any active tuberculosis. In certain series of observations in which both methods were used, the microscopic examination of the blood gave from 60 to 100 per cent. of positive results, while the inoculation of guinea-pigs gave only an occasional positive result, and yet the latter method is recognized as by far the more sensitive and reliable of the two.

There are also, of course, observations in which closely concordant results were obtained, as for instance, those recently reported by Klopstock and Seligmann.[1] These investigators injected guinea-pigs with the sediment of from 5 to 15 c.c. of blood from forty-nine patients with pulmonary tuberculosis in various stages, but in no case did any inoculation tuberculosis develop. In no case in this series did the examination of blood preparations reveal bacilli that could be accepted as unquestionable tubercle bacilli. Before the sediment was injected it was treated with antiformin and then washed.

How is this divergence of results to be explained? As regards the results of microscopic examination alleged as positive, we know that, in some cases at least, saprophytic acid-proof bacilli present in the water or solutions used have been mistaken for tubercle bacilli. It is possible that precipitates and other artefacts have been so mistaken also. Now with respect to the animal inoculations it should be noted that the amount of blood used, the number of animals inoculated and the kind of cases of tuberculosis from which the blood was obtained have not been the same, so that the results really are not comparable. It is also evident that grave errors have been made by some workers in not exercising adequate care in the study and interpretation of the alleged tuberculous lesions in the guinea-pigs. In other words, results reported as positive do not stand the tests when judged according to the criteria applied to inoculation-tuberculosis. At all events, the results so far recorded of observations on the occurrence of tubercle bacilli in the circulation in tuberculosis are so contradictory and in many cases so manifestly unreliable that no definite conclusions are permissible. The work has not given us any methods of value in diagnosis, nor has it given us any new views as to the genesis of tuberculosis.

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[1] Can Proteins Be Absorbed without Preliminary Digestion? editorial, The Journal A. M. A., March 9, 1912, p. 702; A New Theory of Protein Metabolism, Sept. 14, 1912, p. 880; More Facts Regarding Protein Metabolism, Oct. 26, 1912, p. 1548.

[2] Delaunay, H.: *Contributions à l'étude du rôle des acides aminés dans l'organisme animal*, Arch. d. mal. de l'appareil digestif, 1911, v, 218.

[3] Folin, O., and Denis, W.: Protein Metabolism from the Standpoint of Blood and Tissue Analysis, Jour. Biol. Chem., 1912, xi, 87 and subsequent papers.

[4] Van Slyke, D. D., and Meyer, G. M.: The Amino-Acid Nitrogen of the Blood, Jour. Biol. Chem., 1912, xii, 399.

[5] London, E. S., and others: Weitere Untersuchungen über die Verdauung und Resorption unter normalen und pathologischen Verhältnissen, Ztschr. f. physiol. Chem., 1913, lxxxvii, 313.

[1] Klopstock and Seligmann: *Ztschr. f. Hyg. u. Infectionskr.*, 1913, lxxvi, 77.

THE PRESERVATION OF MILK BY DRYING

In the attempt to furnish milk to the consumer in a form free from the objections which hygienic considerations are yearly interposing in greater degree, one of the chief stumbling-blocks lies in the necessity of keeping the nutrient fluid fresh between the times of milking and of its delivery to the home. The problem of the modes of preservation, involving the questions of the application of heat to the raw product, the use of chemical preservatives, or the subjection to low temperature, has given rise to some acrimonious debate and has been the occasion for not a little legislation attempting to regulate the practices concerned. All of the schemes proposed or in use owe any alleged efficiency to such potency as they may exhibit in the direction of inhibiting or destroying the growth of micro-organisms. All of the proposed modes of preserving milk in transit have serious limitations in respect either to effectiveness or to expediency and cost. In view of this it seems strange that greater effort has not been devoted to perfecting some more suitable plan, in particular the obviously promising scheme of desiccating milk.

The concentration of milk by evaporation in the air was attempted more than a century ago. The first really practical method was devised by Mr. Gail Borden of White Plains, N. Y. Acting on a suggestion made by Horsford, he successfully evaporated milk at a low temperature under reduced pressure, and in 1856 obtained a patent for his process of preparing "condensed" milk, as it was subsequently termed. The lack of legal restrictions soon permitted the use of nutritively inferior grades of milk in the production of condensed milk, so that for many years poor qualities prepared from skimmed milk were freely sold to the ignorant customer. From the point of view of the danger of milk as a source of infection, it is doubtless true that there are advantages in condensed milk which are not always inherent in the fresh product. Delépine is said to have proved conclusively that tubercle bacilli, added purposely to milk before concentration, are invariably killed in the process of evaporation.[1] Condensed milk, however, is by no means always germ-free, and living organisms have been found in considerable number in commercial samples, although the species which were isolated were not pathogenic.[1]

The chief objection which has been raised to the widespread use of the more easily conserved condensed milk in place of the readily deteriorating fresh milk has been derived from the field of infant-feeding. Whether or not it be fundamentally justified, there is nevertheless a strong belief prevalent, based on apparently substantial grounds, that children fed on condensed milk are less resistant to the encroachments of disease than those brought up on fresh milk. Furthermore, condensed milk will deteriorate like fresh milk if it is diluted and then exposed to the chance of bacterial contamination.

Since the early years of the present century attempts have been made to carry the desiccation of milk still further than is done in the case of the thick, viscous condensed milk which already is concentrated enough to be a poor culture-medium for micro-organisms. The presence of fat has interposed the greatest difficulty to the complete drying of milk. Three successful processes for the manufacture of dried milk are in actual use.[2] All of them are protected by general and subsidiary patents which make it difficult as yet to assign a universally recognized name to the procedures. In the Ekenberg process the milk is sprayed under constant pressure on the inner surface of a rotating steam-heated cylinder. The milk is thus dried in partial vacuum, at a comparatively low temperature. A more frequently employed process, common in the production of cheaper grades in the United States, sprays the previously concentrated milk on the exterior highly polished surfaces of revolving steel drums. Here it is almost instantaneously dried at a temperature of 230 F. and then scraped off by sharp knife-blades. In the Bénevot-de-Neveu process an entirely different product results. The milk is first concentrated in a vacuum and then sprayed under great pressure into a large drying-chamber where the cloud of finely divided particles is surrounded by a current of hot air and thereby instantly dried. The result is a powder in which many of the physical and chemical properties of the original milk are retained.

The chief objection to most of the material prepared in this way lies in the less agreeable flavor of the dried product. There is every reason to believe that this can be improved with increased attention to the technic, especially the temperatures applied in the different stages and the containers employed. Desiccated milks have already begun to receive attention in the clinic of infant-feeding.[3] This is the severest test to which it can be put. Economy, cleanliness, convenience and hygienic considerations all suggest that high grades of dried milk are entitled to careful investigation for the possibilities which they present. A study of the markets shows that they have already made an inroad into the culinary departments of many institutions and homes.

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[1] Coutts, F. S. H.: Report to the Local Government Board on an Inquiry as to Condensed Milks, London, 1911, N. S., No. 56.

[2] A description is given by Pritchard, E.: The Milk Problem—Condensation and Preservation, Bedrock, 1913, ii, 244.

[3] Porcher, C.: Le lait desséché, Paris.

Psychiatry.—Psychiatry not only enters into intimate contact with all the fundamental sciences of medicine and biology in general, but also touches on the social and moral sciences. On all it imposes problems, from all it requests data.—Lugaro, Modern Problems in Psychiatry.

Current Comment

ANOTHER "CANCER CURE"

A few days ago some of the Denver newspapers contained full-page advertisements of a "cure for cancer." The public was told: "The International Skin and Cancer Institute of Denver claims to have the *only* reliable treatment for cancer in existence. It claims that the remedy it possesses is the *only cure* in the world." The exploiter of this, the latest of cruel frauds, is one John D. Alkire, who, so far as we can learn, has neither medical nor pharmaceutical knowledge. What the "cure" is supposed to be, we do not know; neither, for that matter, is it necessary to know. Certain it is that the thing is a fraud — a cruel fraud, a damnable fraud. It is no excuse to say that Alkire is honestly convinced that the stuff he is selling is a cure for cancer. His conviction merely makes him that much more dangerous and gives him greater potentialities for harm. From its method of exploitation it is impossible to absolve Alkire from the suspicion, at least, that he is not acting in good faith. He claims to have lost both his father and his mother from cancer. If, therefore, he was absolutely convinced that he had the only cure known for this fearful scourge, it is hardly conceivable that he would monopolize the secret of it for the dollars to be made in exploiting it. Alkire and those associated with him will doubtless make money. Those afflicted with cancer, and those who believe themselves to be afflicted with cancer, will flock to Denver for the cure. Of those who rely on Alkire, the actual victims of the disease will, of course, die, but there will be the usual proportion of recoveries from non-malignant sores that will be heralded as "cures." This is the history of every fraudulent "cancer cure." Among the first beneficiaries of Alkire's inhuman business are those Denver newspapers that sold their pages to give publicity to this lying message to the unfortunate sufferers from cancer. To the honor of Denver be it said, some of its newspapers refused to accept Alkire's advertisement.

[After the preceding was in type a proof was sent to a Denver correspondent. Apparently, it was shown to some one connected with the Alkire concern, for on December 15, The Journal received the following telegraphic day letter from Denver:

> "We have learned of your proposed article to be published under title of Current Comment "Another 'Cancer Cure'" in which you make an unwarranted attack upon John D. Alkire and the International Skin and Cancer Institute Company. We wish to advise you that we consider this communication libelous, damaging and wholly unwarranted and that we will attempt to hold you responsible in damages if the communication is published and circulated in that form.—John Horn Chiles, John A. Deweese, Attorneys for John D. Alkire and the International Skin and Cancer Institute Company."

The Journal is not given to publishing matter for the purpose of injuring any one. Neither is it in the habit of being intimidated by threats of lawsuits. The comment on Alkire's "cancer cure" was written for one purpose only: that of attempting to offset in some small degree the publicity that had been given, through a portion of the Denver daily papers, to as cruel and inhuman a fraud as we know of — an alleged cure for cancer — and to warn the public from placing any faith in it. This being the purpose, The Journal is not to be turned from its course by threats of reprisal.]

NEWSPAPER COMMENT ON ANTIVIVISECTION

We comment elsewhere on the recent antivivisection congress in Washington. It has been interesting to notice the attitudes taken by the newspapers. In general, those commonly classed as "yellow" have sided with the antivivisectionists, although in a somewhat half-hearted way, at the same time giving prominence in glaring headlines to the false, and therefore sensational, statements of these misguided enthusiasts. On the other hand, the great mass of newspapers, in their news pages as well as editorially, have tried to represent the real facts. The editorial comments in some instances have been excellent and have shown appreciation of the true conditions. Typical of these is one in the Boston *Herald*, which, under the title "Those Who Will Not See," says: "At the International Antivivisection Congress now in session in Washington, time-honored falsehoods are being rehearsed. Antivivisectionists are peculiarly impervious to facts. Perennially, they assert that animal experimentation has never accomplished anything." It continues with a series of paragraphs setting forth the great benefits to humanity resulting from animal experimentation, which has reduced the mortality in diphtheria from over 50 per cent. to practically nothing; has found a certain preventive for lockjaw; has discovered the Pasteur treatment for hydrophobia, and is daily uncovering great truths which must eventually bring to light cures for cancer, infantile paralysis, tuberculosis and other scourges of mankind which have hitherto baffled the scientists. It then continues: "But all this mass of evidence rolls from the antivivisectionists like water off a duck's back. And when Miss Lind-af-Hageby, the most audible of the assembled humanitarians, suggests sarcastically that scientists should try the experiment on themselves, she overlooks, from the depth of her ignorance, the long roll of honor of men and women who deliberately and unflinchingly risked and gave their lives in the cause of science."

A PAMPHLET ON QUACKERY

The campaign of the Chicago *Tribune* against quacks operating in and from Chicago, has been referred to at various times in these pages. The *Tribune's* articles have had a far-reaching effect. The interest of public and press alike has been awakened. But quackery is about the same wherever we find it, from New York to San Francisco, from Portland to New Orleans. The facts brought out by the *Tribune*, therefore, are just as pertinent to the public generally as they are to the citizens of Chicago—and they will be as much to the point five years from now as they are to-day. Newspaper campaigns must, in the nature of the case, be more or less evanescent. The memory of the public is notoriously short. For this reason The Journal obtained permission to reprint the *Tribune's* articles in pamphlet form and thus put the material in a comparatively permanent form. The result is a booklet of 142 pages.[1] It should be in the hands of every physician to show those of his patients who are likely to fall into the hands of medical charlatans. Written as it is, by newspaper men, and containing as it does, the actual, first-hand experiences of the *Tribune's* investigators, it tells a story that is at once interesting and enlightening. The *Tribune* has turned on the light; we hope that the noisome pictures disclosed thereby may be given the widest possible publicity.

Medical News

ALABAMA

Personal.—Dr. Alf F. E. Thomas, Birmingham, was painfully injured in a collision between motor cars December 6.

New Society Formed.—The Alabama Society of Moral and Sanitary Prophylaxis was organized at Birmingham December 29. George H. Denny of the University of Alabama was elected president; Dr. George Petrie, Auburn, a vice-president, and Dr. William W. Dinsmore, Montgomery, secretary.

Health Campaigning.—Dr. William H. Sanders, Mobile, state health officer, and Dr. Philip B. Moss, Montgomery, director of the State Pasteur Institution, inaugurated a health campaign in Henry County the second week in December and in the succeeding week conducted a similar campaign in Houston County.

New Staff Appointed.—At a meeting of the board of directors of the Elizabeth Duncan Memorial Hospital, Bessemer, the following staff was appointed: Dr. Thomas F. Robinson, chief of staff; Dr. Samuel E. Grout, consulting surgeon; Dr. William Waldrop, oculist, and emergency staff, Drs. R. W. Waldrop, Carl A. Harris, Thomas C. Donald, James C. Berry and Edward P. Lacey.

New Officers.—Blount County Medical Society: president, Dr. Wilson T. Cantrell, Blount Springs; secretary-treasurer, Dr. Jesse T. Hancock, Oneonta.——Morgan County Medical Society at New Decatur, December 6: president, Dr. Arthur M. White, Hartselle.——Chilton County Medical Society at Mountain Creek: president, Dr. Julius P. Hayes; secretary-treasurer, Dr. Thomas J. Marcus, both of Clanton.——Dallas County Medical Association at Selma, December 3: president, Dr. Thomas G. Howard; secretary, Dr. Clarence C. Elebash, both of Selma.——Hale County Medical Society at Greensboro: president, Dr. Jacob Huggins, Newbern; secretary-treasurer, Dr. Charles A. Poellnitz, Greensboro.——St. Clair County Medical Society at Odenville, December 3: president, Dr. James W. Wood, Springville; secretary-treasurer, Dr. J. R. Chandler, Odenville.——Etowah County Medical Society at Gadsden, December 3: president, Dr. James H. Wood, Attalla. ——Calhoun County Medical Society at Anniston, December 2: president, Dr. James C. Moore, Anniston; secretary, Dr. Jackson W. Landham, both of Anniston.——Madison County Medical Society at Huntsville, December 1: president, Dr. Charles E. Blanton, New Market; secretary-treasurer, Dr. Edgar Rand, Huntsville.——Jefferson County Medical Association at Birmingham, December 1: president, Dr. James M. Mason; secretary-treasurer, Dr. Harry P. Shugerman, both of Birmingham.——Lee County Medical Society at Opelika; president, Dr. Abijah B. Bennett; secretary-treasurer, Dr. O. Velpeau Langley, both of Opelika.——Montgomery County Medical Society at Montgomery: president, Dr. Fred W. Wilkerson; secretary, Dr. Paul S. Mertins, both of Montgomery.

CALIFORNIA

To Help Convalescents.—The auxiliary to the University of Stanford Clinic, at a meeting recently held at Lane Hospital, San Francisco. effected a permanent organization to care for patients after their discharge from the hospital.

New Officers.—Yolo County Medical Society at Woodland, December 2: president, Dr. Claire Rason; secretary, Dr. Lula J. Beebe, both of Woodland.

Psychopathic Ward Approved.—The psychopathic ward of the Los Angeles County Hospital has been approved by the board of supervisors and formally accepted. Construction has begun on another wing of the Los Angeles County Hospital.

Personal.—Dr. Philip B. Fry, Benicia, has been appointed surgeon for the Southern Pacific system at Fort Costa.——Dr. Esther Rosencrantz has returned to San Francisco after several years of study abroad.——Dr. William F. Snow, Sacramento, secretary of the State Board of Health, has resigned on account, it is said, of differences with the State Board of Control.

ILLINOIS

Hospital Closed.—The hospital at the Navy Training Station, Great Lakes, constructed by the government at great expense, is not to be reopened as it is considered an unnecessary expense to operate a large hospital when there are so few men stationed at the station.

Personal.—Dr. Frank Parsons Norbury, Springfield, and Dr. Albert H. Dollear, Hospital, have purchased Maplewood Sanatorium, Jacksonville, which was originally established by Dr. Norbury in 1901.——Dr. Lee O. Scott, Rockford, is reported to be seriously ill with typhoid fever in Canonsburg, Pa.——Drs. R. R. and H. F. McCarthy, assistant physicians at the Elgin State Hospital, have been transferred to the Dunning State Hospital.——Dr. Faith Spangler, assistant at the Dunning State Hospital, has been transferred to the Elgin State Hospital.

New Officers.—Adams County Medical Society at Quincy, December 8: president, Dr. Kirk S. Shawgo; secretary, Dr. Elizabeth B. Ball (reelected), both of Quincy.——Vermillion County Medical Society at Danville, December 8: president, Dr. Richard A. Cloyd, Catlin; secretary, Dr. E. Gordon C. Williams, Oakwood.——Madison County Medical Society at Alton, December 5: president, Dr. Edgar A. Cook, Upper Alton; secretary, Dr. Edward W. Fiegenbaum, Edwardsville.——Kewanee Physicians' Club, organized December 4: president, Dr. H. Nelson Heflin; secretary-treasurer, Dr. Francis O. Lowe. ——North Central Illinois Medical Association at La Salle, December 9: president, Dr. George A. Dicus, Streator.

Chicago

Medical Litterateur Dies.—Carl H. von Klein, well known in Chicago as a collaborator of medical and collateral literature, as a translator and abstractor of medical articles, noted as an Egyptian scholar, whose work on the "Papyrus Ebers" was almost ready for issue, died in the Cook County Hospital, December 12, from diabetic gangrene, aged 71.

Ball Addresses Medical History Society.—The ninth meeting of the Society of Medical History of Chicago was held at the Hotel Sherman, December 11, when Dr. James Moores Ball, St. Louis, delivered an address entitled "Great Artists and Famous Anatomists," illustrated by lantern slides. Dr. William E. Quine, president of the society, was in the chair.

Health Appropriation Cut.—In the city budget for 1914 the commissioner of health asked for $1,160,278 for his department and the comptroller reduced this estimate by $220,497, leaving the recommended apportionment $2,870 less than last year. The health commissioner has made a vigorous protest, as he maintains that with this reduction the department will be dangerously crippled by lack of funds.

Ball for Lying-In Hospital.—The artists' fête to be given in the First Regiment Armory, January 9, is for the benefit of the new Chicago Lying-in Hospital, which is to be located on Fifty-First Street facing Washington Park. The building is to be six stories, fireproof, with six operating-rooms, five nurseries, two laboratories and four incubators. There will be beds for 105 mothers and their babies, and one-third of the hospital will be given up to free patients.

INDIANA

State Board Recommends Full-Time Service.—In the annual report of the State Board of Health recommendations are made that health officers be paid sufficient salary so that they may give their entire time to the work of their offices and not be compelled to take private practice.

Verdict of Not Guilty in the Knabe Case.—William B. Craig, a veterinary surgeon of Indianapolis, charged with the murder of Dr. Helene Knabe, was tried at Shelbyville last week. After the prosecution rested, the judge instructed the jury to return a verdict of not guilty on account of insufficient evidence.

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[1] "Men's Specialists Frauds," price 10 cents, post-paid.

Hospital Notes.—The commissioners of Hamilton County have authorized a $30,000 bond issue for the erection of a hospital at Noblesville. It was decided to purchase a building erected several years ago for a hospital by Dr. Samuel Harrell. ——Property valued at $22,000 has been presented to the hospital association at Washington, Ind.

Personal.—Dr. Charles S. Little, Petersburg, is reported to be critically ill.——Dr. John A. Salb has been appointed assistant police surgeon of Indianapolis.——The office of Dr. David H. Harold of Indianapolis was damaged by fire to the extent of $3,000 December 3.——Dr. David N. Foutz, Royal Center, was operated on for cataract recently, and is reported to be doing well.

New Officers.—Elkhart County Medical Society: president, Dr. Elmer E. Ash, Goshen; secretary, Dr. James A. Work, Jr., Elkhart.——Henry County Medical Society at Newcastle, December 4: president, Dr. Herman W. McDonald, Newcastle; secretary-treasurer, Dr. Walter C. Van Nuys, Newcastle.——Sullivan County Medical Society at Farmersburg: president, Dr. Robert H. Van Cleave; secretary-treasurer, Dr. James B. Maple, Shelburn.——Wells County Medical Society at Bluffton, December 2: president, Dr. Louis Severin, Bluffton; secretary-treasurer, Dr. Samuel A. Schoemaker, Bluffton.

IOWA

Personal.—Dr. Guilford H. Sumner, Des Moines, entertained the state executive council at luncheon December 9.——Dr. George Hofstetter, Clinton, who has been seriously ill, is reported to be convalescent.——Dr. Ira Zeno Plunkett, Lewis, is reported to be seriously ill with cirrhosis of the liver.

New Officers.—Medical Society of Burlington, December 10: president, Dr. Albert C. Moerke; secretary, Dr. Ernest A. Hunt.——Clinton County Medical Society at Clinton, December 7: president, Dr. Harry C. Moffett, Clinton; secretary-treasurer, Dr. George A. Smith, Clinton.——Webster County Medical Society, December 2: president, Dr. William W. Bowen; secretary-treasurer, Dr. George B. Palmer (reelected), both of Fort Dodge.——Iowa City Medical Society, December 4: president, Dr. Charles S. Chase; secretary, Dr. Zella White Steward.——Cass County Medical Society at Atlantic, December 4: president, Dr. Ulysses S. Mullins, Atlantic; secretary-treasurer, Dr. Millard F. Stults, Wiota.——Monona County Medical Society at Onawa, December 3: president, Dr. John A. Thomson, Onawa; secretary, Dr. Frederick S. Spearman, Whiting.

KENTUCKY

Dr. Cecil Dead.—The death of Dr. John G. Cecil, one of the best-known physicians of Louisville, occurred on December 12. A notice will appear in the obituary column next week.

Individual Campaign for Hospital.—In a one-man campaign for two weeks carried on by Lucas Brodhead to raise an endowment of $10,000 for the Woodford Memorial Hospital, Mr. Brodhead secured $9,075.

Personal.—Dr. J. T. Dixon has been elected president of the Owensboro Anti-Tuberculosis Association.——Dr. Ap Morgan Vance, Louisville, who was recently operated on at St. Joseph's Infirmary, is reported to be convalescent.

County Health Officers Assemble.—A meeting of the county health officers of the state was held in Louisville, December 8 to 11. Among the out-of-town speakers were Dr. J. N. Hurty, commissioner of health of Indiana; Asst.-Surg. James H. Oakley, U.S.P.H.S., and Dr. Cressy L. Wilbur, Washington, director of the Bureau of Vital Statistics.

New Officers.—Fayette County Medical Society at High Oak Sanatorium, December 9: president, Dr. Carl L. Wheeler; secretary-treasurer, Dr. Lee C. Redmon (reelected), both of Lexington.——Oldham County Medical Society at La Grange, December 4: president, Dr. John E. L. Harbold; secretary-treasurer, Dr. Edgar D. Burnett, Anchorage (reelected).——Union County Medical Association at Morganfield, December 3: president, Dr. Carl P. Cottingham, Uniontown; secretary, Dr. Samuel L. Henry, Morganfield.——Henderson County Medical Association at Henderson, December 1: president, Dr. William A. Poole; secretary-treasurer, Dr. B. J. Neary, both of Henderson.——Fayette County Tuberculosis Association at Lexington, November 26: president, Dr. Ernest B. Bradley; vice-presidents, Dr. Frank H. Clarke and Dr. Orrin L. Smith; secretary, Mrs. J. C. Rogers.

MICHIGAN

Sanatorium Opened.—The Ingham County Sanatorium, Lansing, was formally opened, December 1.

Personal.—Dr. Robert L. French, Detroit, has succeeded Dr. Edmond Quandt as physician of Wayne County.——Dr. Sylvester C. J. Ostrom, Saginaw, who has been seriously ill, is reported to be improving.——Dr. Hugh Cary, Detroit, is said to be critically ill.

Cannot Care for Leper.—The secretary of the State Board of Health has informed the health officer of Benton Harbor that the state has no provision for the care of lepers and cannot therefore assume responsibility for Jacob Goldstein. There is no state institution to which Goldstein can be admitted.

New Officers.—Bay County Medical Society at Bay City, December 9: president, Dr. Colin A. Stewart; secretary-treasurer, Dr. George W. Trumble, both of Bay City.——Kalamazoo Academy of Medicine, thirteenth annual meeting, December 9: president, Dr. James E. Maxwell, Decatur; secretary, Dr. Clarke B. Fulkerson, Kalamazoo.——Jackson County Medical Society at Jackson, December 4: president, Dr. William A. Gibson; secretary, Dr. George A. Seybold, both of Jackson. ——Calhoun County Medical Association's twenty-eighth annual meeting at Battle Creek, December 2: president, Dr. Elmer L. Eggleston; secretary-treasurer, Dr. A. Floyd Kingsley, both of Battle Creek.——Ingham County Medical Society at Lansing, November 20: president, Dr. Samuel Osborn; secretary-treasurer, Dr. Frederick M. Huntley, both of Lansing.

NEBRASKA

State Morgue Established.—A state morgue has been established by the State Anatomical Board at the State Medical College, Omaha. Arrangements have been made to preserve the bodies of persons who die unidentified, for sixty days, so that there may be no difficulty about finding or identifying the bodies.

Physician Exonerated.—In the suit of John F. Neely against Dr. Homer Davis, Genoa, the case was taken from the jury by the federal judge, who found the plaintiff had no case. The suit was for $7,500 damages, the plaintiff claiming that a deformity of the finger was due to improper treatment by the physician. The case was handled by the legal department of the State Medical Association.

Laboratory Building Dedicated.—The new laboratory building of the University of Nebraska School of Medicine, Omaha, the first of the series of buildings to be constructed, was formally dedicated October 16. Addresses were made by Dean Wilson O. Bridges, Hon. John M. Grossman, former Dean Henry B. Ward, Regent F. L. Haller and Dr. Howard A. Kelly, Baltimore.——The University of Nebraska has opened a free dispensary at 1716 Dodge Street, Omaha.

Additions to Faculty.—Additions to the faculty of the University of Nebraska recently announced are Dr. Leroy Crummer, professor of clinical surgery; Dr. John P. Lord, professor of orthopedic surgery; Dr. Edson L. Bridges, instructor in medicine; Dr. William N. Anderson, instructor in physical diagnosis; Dr. Oscar T. Schultz, Cleveland, Ohio, instructor in pathology and bacteriology; Dr. A. A. Johnson, instructor in clinical pathology, and Dr. Claude Mitchell, assistant in physiology.

New Officers.—Lancaster County Medical Society at Lincoln, December 6: president, Dr. Henry J. Lehnhoff; secretary-treasurer, Dr. Harry Winnett Orr, both of Lincoln.——Adams County Medical Society at Hastings, December 3: president, Dr. Franklin Schaufelberger, Hastings; secretary-treasurer, Dr. Alma J. Chapman, Ingleside.——Tri-County (Brown, Keya Paha and Rock) Medical Society at Ainsworth: president, Dr. George O. Remy, Ainsworth; secretary-treasurer, Dr. James C. Tucker, Long Pine.

Personal.—Dr. Edmund B. Fulliam, Shelby, has been appointed division surgeon for the Union Pacific Railway. ——Dr. Benjamin R. McGrath, Grand Island, has leased the General Hospital for three years from the Grand Island General Hospital Corporation. The institution will be operated as in the past.——Dr. Tenny T. Harris, Omaha, was elected supreme vice archon of the Pi Beta Phi medical fraternity at its recent meeting in Minneapolis.——Dr. Solon R. Towne of Omaha sustained a fracture of the clavicle and a rib while endeavoring to quiet a fractious horse, October 23.——Dr. John H. Vance, Omaha, was operated on in Rochester, Minn., for the removal of gall-stones, October 9.——Dr. Davis, York, has been appointed pathologist to the Hastings State Hospital.

NEW YORK

New York City

Biggs Resigns.—Dr. Hermann M. Biggs has resigned his office of chief medical inspector in the Department of Health. Dr. Biggs has been in the service of the city for twenty-six years and it is to him that credit is largely due for keeping the Department of Health abreast of the times. His resignation is regretted on all sides.

New Classification in Tuberculosis Clinics.—The new classification and results of treatment recommended by the National Association for the Study and Prevention of Tuberculosis was recently brought up for discussion by the Health Department in response to a request from the secretary of the national association as to whether the Health Department regarded this classification as feasible for use in its clinics. The new classification, which it is believed offers many advantages over the old, will be adopted Jan. 1, 1914.

Raising Funds for Washington Heights Hospital.—A ten days' campaign for the purpose of raising $150,000 for this institution was begun on December 8 and is to be continued for ten days. During the first four days of the campaign $25,982 was raised. The hospital now occupies two made-over dwellings, from which it is soon to be ousted and the fund is for the purpose of erecting a permanent home for the hospital. Last year 7,000 cases were treated, 1,200 ambulance calls answered and 5,000 dispensary cases were treated.

Sale of Mercury Regulated.—The Department of Health has announced that restrictions have been placed on the sale of bichlorid of mercury. The amendment of the Sanitary Code which has been adopted reads as follows: "Bichlorid of mercury. otherwise known as corrosive sublimate, shall not be held, kept, sold or offered for sale at retail in the dry form except in colored tablets individually wrapped, the wrapper to have the word 'poison' in plain letters conspicuously placed, and dispensed in sealed containers of glass, conspicuously labeled with the word 'poison' in red letters." This ruling does not apply to tablets containing one-tenth of a grain or less of the drug.

The Safety Exhibit.—The first International Exhibit of Safety and Sanitation was opened December 11 and continued until December 20 in the Grand Central Palace. Among the features of the exhibition were exhibits of national governments. The United States showed how it cares for soldiers and sailors in times of peace and war, including a field hospital and ward rooms. The actual conditions of camp life were reproduced as regards sanitation, and preventive measures against typhoid fever and yellow fever. The Public Health Service showed the protective measures that are being enforced in mines. The British Home Office and the Board of Trade showed the government activities in England for protection in factories and workshops. Switzerland illustrated the methods that it has adopted for stamping out the white slave traffic. There are more than 350 delegates attending the sessions of the conference, which are held daily in connection with the exhibition.

Babson's Tables on Medical Guesses.—Roger W. Babson's charges, based on statistics from hospital records, accusing physicians of incorrectness in making diagnoses, have been refuted and explained by Dr. Sigismund S. Goldwater of Mount Sinai Hospital. Dr. Goldwater points out the fallacies in Babson's statistics and accounts for the high percentage of "bad guessing" by the fact that there are too few post-mortem examinations in this country. He favors legislation requiring such examinations in all public hospital death cases in order to give physicians the opportunity to correct their mistakes in similar cases that they may have in the future. Dr. Goldwater shows that in New York City post-mortem examinations are had on only from 7 to 24 per cent. of deaths, while in Europe the number ranges from 58 to 97 per cent. Dr. Goldwater also points out that many of the so-called discrepancies are not real but only apparent because the lay mind is not in a position to appreciate all the factors involved.

NORTH CAROLINA

Personal.—Dr. Milton R. Gibson, Maxton, announces that he will remove to Raleigh, January 1, where he will limit his work to the eye, ear, nose and throat.——Dr. James W. Kornegay, Mount Olive, was stricken with cerebral hemorrhage in Goldsboro, December 8, and is reported to be critically ill.

Dairies Must Be Sanitary.—The supreme court of North Carolina, in the case of the City of Asheville against H. L. Nettles, dairyman, has sustained the Asheville milk ordinance, prescribing a license tax of one dollar per cow and specifying standard sanitation to be observed in the management of dairies and the marketing of milk.

New Officers.—Third District Medical Society, first annual meeting in Wilmington, December 3: president, Dr. James L. Nicholson, Richlands; secretary-treasurer, Dr. Earnest S. Bulluck, Wilmington.——Guilford County Medical Society at Greensboro, December 5: president, Dr. John A. Williams; secretary-treasurer, Dr. Parran Jarboe, both of Greensboro.——Seventh District Medical Society at Lincolnton, December 5: president, Dr. John B. Wright, Lincolnton; secretary, Dr. Robert H. Lafferty, Charlotte. The next meeting will be held in Concord.

OHIO

Place of State Meeting Fixed.—The Ohio State Medical Association is said to have accepted the invitation tendered it by Columbus, and will meet in that city May 5 to 7, 1914, holding its sessions in Memorial Hall.

Personal.—Dr. Howard M. Francisco has been appointed assistant physician and pathologist at the Cleveland State Hospital.——Dr. Sherman Wolcott suffered a cerebral hemorrhage at his home near Gahanna, September 8.——The office of Dr. Frederick L. Lewis, Akron, was destroyed by fire, November 26.

New Officers.—Ashland Academy of Medicine, organized December 5: president, Dr. Robert C. Kinnaman; secretary-treasurer, Dr. Jacob Fridline.——Tuscarawas County Medical Society: president, Dr. Robert A. Goudy, Newcomerstown; secretary-treasurer, Dr. George T. Haverfield, Uhrichsville.——Montgomery County Medical Society at Dayton, December 5: president, Dr. Rufus C. Pennywitt; secretary, Dr. Charles C. McLean (reelected), both of Dayton.——Clark County Medical Society at Springfield, December 8: president, Dr. James E. Studebaker, Springfield.——Wyandot Medical Society at Upper Sandusky, December 4: president, Dr. George O. Maskey; secretary, Dr. Arthur N. Smith, both of Upper Sandusky.

Society Proceedings.—The Academy met at the Literary Clubrooms, Monday evening, December 15. The nominating committee submitted the following names of members to act as official candidates for the coming year: president, Dr. A. B. Thrasher; first vice-president, Dr. Sidney Lange; second vice-president, Dr. Dudley Palmer; secretary, Dr. C. T. Souther; treasurer, Dr. A. G. Drury. The program for the evening was one of particular interest. Dr. Paul G. Woolley read a paper on "Multiple Hyalo-Serositis"; Dr. Oscar Berghausen, on "Syphilis of the Liver"; Dr. E. C. Steinharter, on "Experimental Gastric Ulcer in the Rabbit."——Dr. J. Edward Pirrung was the host at the last meeting of the Obstetrical Society which met at the Alms Hotel December 11. A very interesting paper was read by Dr. Bonifield, dealing with "After-Treatment of Abdominal Section." A few of the many debatable theories advanced in the paper were early purgation following abdomnial section, denial of sedatives for the relief of pain and the substitution of hot water by mouth or rectum to take the place of ice for the relief of thirst. The paper was very freely discussed by every member present, after which a bountiful lunch was served.

Cincinnati

Prevention of Cancer.—At the annual celebration of the Founders and Emory Memorial Day at the Ohio Mechanics' Institute a lecture was delivered, December 16, by Dr. E. Gustav Zinke on "Cancer, Its Cause, Prevention and Cure."

Personal.—Dr. Simon P. Kramer has been appointed professor of clinical surgery in the University of Cincinnati.——Dr. Henry L. Woodward has been appointed senior physician to the Cincinnati Hospital, vice Dr. Frederick Forchheimer, deceased.——Drs. S. Oscar Berghausen, Clement C. Fihe, Starr Ford and Arthur E. Osmond have been added to the junior staff of the institution.

Councilor District Meeting.—On December 8, the First Councilor District Medical Association held its annual meeting. Clinics were arranged at the various hospitals in the morning and in the afternoon a session was held in the amphitheater of the City Hospital, where addresses were made by the president, Dr. Herschel Fisher, Dr. A. W. Binckley of the Ohio State Liability Board of Awards, Drs. Martin H. Fischer and Sidney Lange, Cincinnati, and Dr. John T. Geraghty, Baltimore. The evening session of the society was held by invitation with the Cincinnati Academy of Medicine, and at this session addresses were delivered by Dr. George A. Fackler, president of the Ohio State Medical Association, and Dr. George H. Simmons, Chicago.

Sex Education Discussed.—At the meeting of the Medico-Civics Society, November 20, the paper of the evening was presented by Dr. Philip Zenner on "Sex Education in the Public School." The speaker treated the subject from the point of view of home instruction and school instruction, preferring the former and emphasizing the necessity for the latter, because of the unwillingness or inability of parents to undertake the task of imparting proper knowledge along these lines to their children. Dr. Elizabeth Campbell opened the discussion and urged that the teachers be especially trained for this work in order to be able to present the subject to their pupils in a proper and convincing manner. The general consensus of opinion appeared to be that while the necessity for sex education in the public schools is at once urgent and apparent, yet the matter is one that requires so much tact, special thought and preparation on the part of the educator that for the present, at least, it should be postponed.

PENNSYLVANIA

Hospital Building.—The Mercey Hospital, Johnstown, plans to build a new administration and ward building, to cost about $50,000.

Home for Incurables Needed.—In the annual report of General Agent Bromley Wharton to the State Board of Public Charities, recommendation was made for the establishment of a state institution especially devoted to the care of cases of incurable diseases, such as cancer and other wasting disorders.

Personal.—Dr. F. B. Thomas has returned from Europe and opened an office in Dorranceton.——Dr. Richard G. Burns, Pittsburgh, has been appointed superintendent of the bureau of sanitation in the department of public health at Pittsburgh, vice Dr. H. K. Battey, deceased.——Dr. Charles J. Keim has been elected burgess of the borough of Cabasauqua.

Library Presented to Medical School.—The library of the late Prof. Ernest Ziesler, for many years professor of pathology at the University of Freiburg, purchased for the University of Pittsburgh by Mr. Richard Beatty Mellen was formally presented to the University at a meeting held in the University Club, Pittsburgh, December 5. The addresses of the evening were given by Dr. William H. Welch, Baltimore, and Mr. Harrison W. Carver, Pittsburgh.

New Officers.—Oil City Medical Club, December 5: president, Dr. Frank B. Jackson; secretary, Dr. Sylvester W. Sellew.——Physicians' Association of the Bethlehems, December 4: president, Dr. Milton H. Herbein, South Bethlehem; secretary, Dr. Christian A. S. Kemper, Bethlehem.——Jefferson Medical Club Alumni Association of Northeastern Pennsylvania at Scranton, December 4: president, Dr. James N. White, Scranton; secretary, Dr. Frederick L. Van Sickle, Olyphant.

Health Commissioner Sues Town.—State Health Commissioner Dixon on December 3, instituted suit against the town of Coudersport for the recovery of $145,000 in fines. It is charged that the borough failed to observe a decree of the governor, attorney general and commissioner of health directing it to "discontinue the discharge of sewage into a stream draining into the Allegheny River. A fine of $500, and a penalty of $50 a day for each day of failure to observe the decree is claimed.

Philadelphia

Bazaar for Ambulance.—The Hospital of the Woman's Medical College held its seventh annual bazaar, December 6, the proceeds from which are to be devoted to the purchase of an ambulance.

Personal.—Dr. Hubley R. Owen has been reinstated as chief police surgeon of the city.——Dr. William Campbell Posey, who has been seriously ill with pneumonia, is reported to be convalescent.——Dr. Arthur Dare sailed for Europe, December 12.

TEXAS

Health Bulletin Adopted.—Gaines, Hunt and Fayette counties have adopted the monthly bulletin of the State Board of Health as a supplementary text-book on health.

Sanatorium Addition.—The annex to the Scott and White Sanitarium, Temple, erected at a cost of $50,000, which is nearly ready for occupancy, will double the capacity of the institution which will then be able to accommodate two hundred patients.

Personal.—Dr. Bascom Lynn, superintendent of the State Tuberculosis Colony, Carlsbad, has resigned, to take effect January 1.——Dr. L. S. McKane, special representative of the State Board of Health, has returned after three months in Tampico, Mex.——Dr. Malone Duggan, San Antonio, is reported to be ill in Johns Hopkins Hospital, Baltimore.

Quarantine Edict Revoked.—The governor in a proclamation dated November 28 revoked his quarantine proclamation of April, 1913, which imposed certain conditions on all vessels from all ports south of 25 degrees north latitude and entering ports of this state, this proclamation to take effect on and after December 1. The section relating to entrance of vessels infected with contagious diseases into Texas ports will remain in full force, and quarantine is furthermore declared "against all person or persons infected or liable to be infected with small-pox, yellow fever, cholera, typhus fever, bubonic plague or other dangerous communicable diseases, whether within or without the state of Texas."

New Officers.—Grayson County Medical Association at Sherman, December 3: president, Dr. Otto Carl Ahlers, Sherman; secretary-treasurer, Dr. Davis Spangler.——McLennan County Medical Society at Waco, December 2: president, Dr. James M. Witt; secretary-treasurer, Dr. D. L. Eastland, both of Waco.——Jefferson County Medical Society at Beaumont, December 1: president, Dr. Louis Goldstein; secretary-treasurer, Dr. Wilbur F. Thomson, both of Beaumont.——Dallas County Medical Society at Dallas, December 1: president, Dr. Calvin R. Hannah; secretary, Dr. Royal S. Loving (reelected), both of Dallas.——Jasper and Newton County Medical Society at Kirbyville, November 25: president, Dr. B. A. Swinney, Newton; secretary, Dr. Dru McMickin, Kirbyville.——Trinity County Medical Society at Trinity, November 20: president, Dr. Charles H. Bradley, Groveton; secretary-treasurer, Dr. William H. Pope, Jr., Trinity.——El Paso-Big Springs Medical Association at Abilene, November 18: president, Dr. Granville T. Hall, Big Springs; secretary, Dr. W. R. Smith, Colorado.——San Antonio Academy of Medicine, organized November 10: president, Dr. Charles A. R. Campbell; secretary-treasurer, Dr. R. A. Roberts.

VIRGINIA

Presentation to Secretary.—At a meeting of the South Piedmont Medical Society in South Boston, the third Tuesday in November, a handsome silver service was presented by the society to its secretary, Dr. George A. Stover, South Boston.

The James Thomas Lectures.—Dr. Jacques Loeb, director of the department of experimental biology of the Rockefeller Institute for Medical Research, conducted the thirty-fourth annual course at Richmond College under the James Thomas lecture endowment, December 11 and 12. The first lecture was on "Artificial Parthenogenesis" and the second on "Determinism in the Animal World."

New Officers.—Richmond Academy of Medicine and Surgery, December 9: president, Dr. Charles V. Carrington; secretary, Dr. Mark W. Peyser (reelected for the twenty-first term).——Medical Faculty of Petersburg, November 21: president, Dr. William C. Powell; corresponding secretary, Dr. George H. Reese; recording secretary, Dr. Leverett S. Early.——Roanoke Academy of Medicine: president, Dr. William L. Powell; secretary, Dr. William W. S. Butler, Jr.

GENERAL

Tri-State Association to Meet.—The sixteenth annual session of the Tri-State Medical Association of the Carolinas and Virginia will be held in Wilmington, N. C., Feb. 18 and 19, 1914, under the presidency of Dr. Southgate Leigh, Norfolk, Va. Dr. Charles T. Harper, Wilmington, is chairman of the committee of arrangements.

Soo Line Surgeons Hold Meeting.—At the seventh annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association held at Milwaukee, December 5 and 6, the following officers were elected: Dr. John M. Dodd, Ashland, Wis., president; Dr. John Steele Barnes, Milwaukee, vice-president; Dr. John H. Rishmiller Minneapolis, secretary-treasurer (reelected), and Drs. John H. Rishmiller, Minneapolis; Chas. A. Steward, Duluth; Chas D'A. Wright, Minneapolis; Alexander J. McCannel, Minot, N. Dak., and John M. Crafts, Minneapolis, censors. Sault Ste. Marie, Mich., was selected as the next place of meeting.

Infectious Diseases.—During the first week in December contagious diseases have been reported, among others, from the following places: Diphtheria: Minneapolis, 160 cases; Litchfield, Minn., twenty-four cases; Augusta, Kan.; Wilkes-Barre, Pa.; Detroit, 200 cases; defective methods were found in the manner of releasing from quarantine, which was said to account for the spread of the disease. Dr. Edward H. Hayward, bacteriologist of the health department, resigned.

The two-culture method has been adopted: Woodland, Cal.; Grass Valley, Nev.; Davenport, Iowa. At Jefferson City, Mo., sixteen prisoners were barred from the state penitentiary on account of exposure to a case of diphtheria in the jail at St. Louis before being taken to Jefferson. Small-pox: In order to prevent the spread of the epidemic at Joliet, Ill., almost universal vaccination was enforced by the city and health authorities. December 2 Indianapolis had eight cases reported in forty-eight hours. Shelbyville, Ky., reports a number of cases. Walla Walla, Wash., has a number of cases. DeRidder, La., where compulsory vaccination has been enforced. Kansas City, Mo. Toledo, Ohio, where a third school has been closed on account of a few cases. At Dutzow, Mo., the school was closed. Scarlet fever: Liberty, Tioga County, Pa.; Wilkes-Barre, Pa.; Mount Pleasant, Pa., school closed. An outbreak occurred among the Indians on the Crow Reservation, Montana, and quarantine of the reservation was declared by the State Board of Health.

Civil Service Examination.—The United States Civil Service Commission announces an open competitive examination for medical assistant, for men only, on Jan. 12, 1914. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Chemistry, Department of Agriculture, Washington, D. C., at $1,800 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer or promotion. The duties of this position will be to study the claims and representations made in conjunction with proprietary remedies, look up medical literature, assist in preparing cases, etc., under the Food and Drugs Act. A knowledge of French and German is desirable. Competitors will not be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects	Weights
1. General education and medical training	35
2. Practical or professional experience and fitness	45
3. Publications or thesis	20
Total	100

Graduation from a medical school of recognized standing and at least three years' subsequent experience in the practice of medicine, or two years' subsequent experience in either pharmacological investigations or the actual examination of drug products with reference to the claims made therefor by manufacturers, are prerequisites for consideration for this position. If a thesis is submitted under Subject 3 it must present the results of original investigational work on the part of the applicant in some phase of medicine or pharmacology. Statements as to training, experience and fitness are accepted subject to verification. Applicants must have reached their twenty-fifth but not their forty-fifth birthday on the date of the examination. Under an act of congress applicants for this examination must have been actually domiciled in the state or territory in which they reside for at least one year previous to the date of the examination. This examination is open to all men who are citizens of the United States and who meet the requirements. Persons who meet the requirements and desire this examination should at once apply for Application Form 304 and special form, to the United States Civil Service Commission, Washington, D. C.; the secretary of the United States Civil Service Board, Post Office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed and filed, in complete form, with the commission at Washington prior to the hour of closing business on Jan. 12, 1914. In applying for this examination the title "United States Civil Service Examination, Medical Assistant (Male)" should be used.

CANADA

Library to Be Established.—The Medical Council of Saskatchewan has decided to establish a medical library at Saskatoon and not at Regina as originally planned.

Typhoid in Halifax.—Halifax, N. S., has been experiencing an epidemic of typhoid fever. An emergency hospital for fifty patients has been secured, and an investigataion is proceeding into the cause of the outbreak.

Instruction in Tuberculosis.—For the benefit of the students of the Manitoba Medical College, the provincial sanatorium at Ninette will be utilized for clinical instruction in tuberculosis. This is the first departure in this direction in Canada.

Prize for Research Work.—A prize to be awarded annually or biennially has been established in connecetion with research work in the University of Manitoba. It will be for the essay on the best work done in connection with physiology or physiological chemistry.

Personal.—Prof. J. George Adami, McGill University, Montreal, addressed the Denver County Medical Society December 12 on "Intestinal Stasis."—Dr. John Taylor Fotheringham, Toronto, was the guest of the evening at the annual dinner of the Oxford County Medical Association, October 29.

Will Accept Registration Certificates.—The Manitoba Medical Council has decided to accept for registration under the provisions of the Dominion Medical Act, all applicants who present a certificate of registration on the Dominion Medical Council register, whether the same has been obtained by examination or by virtue of ten years' previous practice in any province, subject only to proof of identity, and payment of the registration fee of $100.

Hospital News.—Toronto city council has made a supplementary grant of $8,272.20 to the Hospital for Sick Children. ——Forty-seven patients were treated at the Victoria Hospital, Fredericton, N. B., in October. One death occurred. ——The Royal Victoria Hospital at Barrie, Ont., has just completed its sixteenth year. During the past year 418 patients received treatment. There were thirty-nine births in the year and twenty-six deaths.——The General Hospital, Welland, Ont., treated 437 patients during the year ended September 30. Twenty-five deaths and seventeen births occurred. More room is to be provided for this hospital and a nurses' home in the immediate future.——Toronto has now a measles hospital with accommodation for thirty patients. It was formerly the Nurses' Home at the old General Hospital.——The Montreal Dispensary will erect a new building.——The central building of St. Boniface Hospital, Winnipeg, is to be rebuilt.——St. Paul's Hospital at Saskatoon, Sask., newly opened, has accommodation for 100 patients. The cost of the building was $175,000.——The Waddell Memorial Hospital at Canora, Sask., has been completed and Dr. Gray of Montreal has been appointed superintendent.——Vancouver General Hospital will soon add an administrative building and nurses' home. The former is to cost $80,000 and the latter $115,000.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 6, 1913.

The National Insurance Act

The magnitude of medical services under the national insurance act is shown by some figures recently given by a member of the government, Mr. Churchill, who asserts that no greater administrative achievement has stood to the credit of the civil service of any country than the establishment in a few months of a tremendous universal system and organization of insurance. Although the act has been working for only nine months, 13,700,000 persons have been insured, and their affairs are being administered through 233 insurance companies and upward of 23,500 societies; 22,000,000 visits have been paid by 20,000 panel physicians, and nearly 12,000,000 cases have been treated. The cost of medical benefit has been $22,500,000. Sanatorium benefit has been provided for 36,000 persons.

The act is regarded by various sections of the profession with very different feelings. It cannot be denied that those engaged in industrial practice have benefited financially. Remuneration is much better than under the old contract practice of societies—nearly twice as much—and the physician is free from the domination of the clique which rules every lodge and has power to deprive him of his appointment because of some unreasonable charge by a member. Now if a patient is not satisfied with his physician, all he can do is transfer himself to the panel of another doctor. The increased remuneration obtained under the act has attracted physicians into industrial practice in such numbers that there is a shortage in other directions. Appointments under education and asylum authorities, which would have been sought by fifty applicants before, have been advertised in the medical journals for six or eight months without bringing a single answer, although the salaries have been doubled. Formerly young physicians were glad to take appointments at salaries ranging up to $1,500 a year. On the other hand, considerable dissatisfaction prevails in the ranks of those who have not accepted service under the act (non-panel physicians). They complain that their patients are compulsorily transferred to panel physicians, though they appear in many cases to have benefited instead of losing financially. This paradox is explained by the fact that at the time of the struggle of the British Medical Association with the government political feeling ran high, and the conservative press as well as a section of the profession held up to opprobrium those who would take service under the act, alleging that they were an inferior order of practitioners. Moreover, the large and unnecessary amount of clerical work thrust on physicians at the inauguration of the act proved most onerous and made inroads on the time required for professional work. The opposition press exaggerated the evil and represented panel physicians as so overwhelmed with work that they could not give proper attention to patients. The result was that the fact that a physician was not on the panel was a recommendation. He was considered to be a superior man, and to have sufficient time to attend to private patients. Though medical benefits under the act are working smoothly and the number of complaints is exceedingly small considering the enormous number of people involved, the panel practice is in many ways an improvement on the old contract practice; it still has some of the evils inseparable from contract practice. Time is wasted in attending hypochondriacs and others with very little the matter who wish to avail themselves of the free and unlimited drugging provided. The incentive to individual effort in the case of private patients is wanting. Examination tends to be perfunctory and treatment routine.

Radium for Hospitals

At a meeting of the governors of the Middlesex Hospital, Prince Alexander of Teck announced that he had made a suggestion to the council of King Edward's Hospital Fund with the object of securing a more economical provision of radium for use in the London hospitals. In order to avoid the capital of these hospitals being drawn on for the purpose he asked the council to purchase a quantity of radium and allow all the London hospitals to utilize the emanations which could be collected from it at the price of their production. The Middlesex Hospital is the only one of the general London hospitals which contains special wards for the treatment of cancer and a special laboratory for its investigation. It has recently been compelled to withdraw from its capital $5,000 for the purchase of radium. Sir Alfred Pearce Gould, surgeon to the hospital, pointed out the necessity for care in inferring that a case of cancer had been cured by radium, for the disease sometimes underwent spontaneous cure. Recently a man had been discharged from the hospital in robust health although he had been ill for two years with cancer which was pronounced uncurable. Without radium or any specific treatment or operation he recovered. In some cases they had the most striking results; one application of a tube of radium had been followed by rapid disappearance of malignant growth. On the other hand, similar growths had been treated in the same way with no improvement. He had also known half of an extensive area of the disease quickly removed by radium while the other half was entirely unaffected. In some cases burns occurred very rapidly. It would not be accurate to say that radium was a cure for cancer in the same way that drugs were specifics for some diseases. So far as they knew there was no hope that radium would be able to deal with cases in which cancer had diffused itself among the internal organs, but so long as the disease was localized the results were sufficient to say that radium was a more hopeful remedy than anything except operations.

The Leprosy Problem in the British Empire

Dr. H. Bayon, research bacteriologist to the union government of South Africa, has delivered a lecture with the object of having the government institute a system of registration and segregation of lepers. He said that at present there were from twenty-five to fifty lepers in England, and the simple precautions taken by these unfortunates was sufficient to prevent contagion. In India, on the other hand, there had been an increase of lepers from 100,000 to 110,000. In South Africa the increase was more marked. In Basutoland the principal medical officer counted 300 lepers twenty-five years ago. Last year they numbered from 800 to 900. He submitted that only by segregation could the disease be coped with. Sir Malcolm Morris said that the lepers in London were hunted from one lodging-house to another. Their pitiable condition had caused some benevolent persons to attempt to provide some small institution in which they could be segregated and cared for, but it was necessary to proceed with care because if it became known that a comfortable home was provided for lepers in London they would be attracted here from other countries.

BERLIN LETTER

(*From Our Regular Correspondent*)

Berlin, Nov. 23, 1913.

Personal

On the occasion of his transfer from Greifswald to Berlin, Professor Loeffler was elected an honorary citizen of the city of Greifswald.

The Struggle between the Insurance Societies and Physicians

The development of this struggle is going on in the form decided on by the Aerztetag. The present contracts are not being renewed, so that a great number of the Krankenkassen have no longer any physicians under contract to attend their policy-holders. It is reported from various sources that an attempt is being made to resume negotiations for a new agreement between the two parties, but it is scarcely to be assumed that our highest imperial authority will take this step.

Foundation of an International Society for Sex Investigation

An international society for sex investigation was founded in Berlin November 16, the Internationale Gesellschaft für Sexualforschung. The organizations which are active at present in the field of sexual investigation are chiefly concerned with practical and humanitarian purposes, such as hygienic, educational and legal, social and moral reform. The new society is to devote itself to a purely scientific investigation of sexual problems. For this reason the man at the head of the society is not a physician, but Prof. J. Wolff, who is professor of economics at the technical high school in Charlottenburg (*Lehrender Nationalökonom*). It is also a notable fact that a professor of theology in the Berlin University belongs to the executive committee. In the meeting for organization he emphasized the fact that he hoped for advantages from the new society in three fields, psychology, economics and history.

Statistics in Regard to Venereal Disease in Germany

The association of German statisticians has determined to secure information with reference to the number of venereal patients at present under medical treatment. As experience has shown and as every practitioner knows, such an investigation will not give the entire number of patients, but the knowledge obtained from the large number of cases available will be of value. A committee appointed by the association in conjunction with the executive committee of the German association for combating venereal diseases has elaborated a plan by which it is to be determined how many persons with venereal disease were under medical treatment in the period from November 20 to December 20, 1913, inclusive. This is determined by including in a table the number of patients visiting the office in this time in such a manner that each patient is reckoned only once. Only chancroid, gonorrhea and syphilis with their consequences are reckoned among venereal diseases. All non-venereal genital affections, such as acuminate condyloma, non-gonorrheal urethritis, herpes genitalis, etc., are not included. In view of the extraordinary importance of tabes and paralysis, separate columns are provided for these with a distinction between old cases and those treated for the first time. The cases treated in the public hospitals are collected directly by the statistical bureau.

Public Care of the Sick in Berlin for 1912

There were treated in the public municipal hospitals 60,578 persons, which is nearly 2,300 fewer than in the previous year. On the average there were 4,165 patients in the hospitals daily, which is on the average nearly 200 fewer per day than in the previous year. The six hospitals occasioned an expense of $1, 837, 500 (7,350,100 marks) with only $19,629 (78,517 marks) receipts, so that the entire remainder of over $1,800,000 (7,250,000 marks) is to be reckoned as expense. To this must be added the interest on the municipal capital involved, so that the total expense reaches $2,187,048 (8,748,193 marks). The average daily expense for each patient is 98 cents (3.93 marks), as compared with 91 cents (3.66 marks) in the previous year. The actual cost for each patient including the interest on the capital has risen from $1.33 (5.32 marks) daily to $1.43 (5.72 marks), a not inconsiderable increase.

German Universities in 1913

The number of students matriculated in the universities in the German empire, which has doubled since 1896, has risen further during the last summer. As compared with the previous year, the increase is 7,851, and compared with the summer semester of 1903 is about 24,000. The increase during the last ten years is as great as the entire attendance at the German universities thirty years ago. The annual increase for the last year is somewhat smaller than the previous year, so that it may be assumed that the high point of the increase has been passed, which in view of the overfilling of many learned professions may be regarded as desirable. If to the number of matriculated students, the number of those admitted to the lectures is added (3,079 men and 1,027 women) there are at present attending the German universities 64,462 persons (56,910 men and 3,436 women as compared with 56,602 men and 2,959 women in the previous year). As to the attendance of the different departments, theology showed a marked increase with 3,882 students as compared with 3,338 in the previous year, but the principal increase is seen in the department of medicine, to which university students have given the preference for some years. The medical departments have 14,750 students as compared with 13,409 in the previous year and 8,282 five years ago. The next largest increase is in economics and agriculture. Dentistry decreased as a result of higher entrance requirements and longer time of study from 789 to 655, and law from 11,087 to 10,396, and finally students of philosophy from 16,644 to 15,471.

BUDAPEST LETTER

(From Our Occasional Correspondent)

Budapest, Nov. 29, 1913.

Preventive Inoculations against Typhoid

The chief medical officer of the county of Zemplen asked the minister of public hygiene (also minister of internal affairs) to provide his county with free vaccine in order that those who come in contact with typhoid patients (as nurses and persons engaged in such occupations as earth-working and privy-cleaning) might be vaccinated. At present the chief medical officer will refrain from making vaccination obligatory; but thinks that the state ought to provide free vaccine, which should be prepared in the bacteriologic laboratory of the university. The minister accepted the proposal with great pleasure, and steps were taken immediately to prepare sufficient vaccine in the ministerial laboratory to meet the requests of any counties for vaccine.

Lack of Cadavers for Dissection in the Anatomic Institutions

A new resolution has been offered at the workmen's insurance office, according to which any member of the sick-clubs who dies without relatives shall be buried by the respective club. As the number of members in Budapest amounts to about 450,000 (out of a population of 900,000), the new rule threatens medical teaching with a cadaver famine, the more so, as the Chevra Kadisha, a Jewish charitable society, provides funerals for all Jewish subjects whose funeral is not attended to by relatives. Considering that the number of medical students amounts to 2,800 in the Budapest University, while the number of cadavers at the disposal of the anatomic institutions had amounted to only 500 a year, it could justly be feared that the successful teaching of anatomy, operative surgery, etc., would be endangered should the resolution of the workmen's insurance office come into force. To prevent this Anton Genersich asked the minister of public instruction to frame a new bill providing that all cadavers not claimed by relatives may be used for purposes of instruction.

Eclampsia an Anaphylactic Disease

Dr. Oscar Vertes, assistant of the obstetric clinic of the Kolozsvar University (Hungary) has carried out extensive investigations in the bacteriologic laboratory of the Friedrichshain General Hospital (Berlin) as to the pathogenesis of eclampsia. He sums up the results of his investigations as follows: The pregnant organism is on account of the absorbed villous element (proved by Schmorl) in an anaphylactic state. That the chorionic villi which contain both racial (*arteigen*) and individual (*körpereigen*) albumins, are actually capable of producing eclampsia, has been clearly demonstrated in his experiments. Certain similarities have beeen shown between anaphylactic manifestations and the symptoms of eclampsia. The experimental animals which died have similar organic changes to those of persons dying with eclampsia. The albuminuria also strengthens the assumption that eclampsia is a manifestation of anaphylaxis.

Marriages

Alexander Contee Thompson, M.D., Greeley, Colo., to Miss Mabel Chesley Berry of Washington, D. C., at Greeley, November 26.

Jesse Lee Hagadorn, M.D., to Miss Phyllis Ivy Maughan, both of Los Angeles, at San Bernardino, Cal., December 1.

Asher Reid McMahon, M.D., Memphis, Tenn., to Miss Geraldine Sembower of Bloomington, Ind., December 6.

James Albert Honeig, M.D., Cambridge, Mass., to Miss Florence Imogene Graham, at Boston, December 6.

Earle Edward Tilton, M.D., Boston, to Miss Mary Christie Stephenson of Port Deposit, Md., December 3.

Edgar Dale Downing, M.D., San Francisco, to Miss Marjorie Fraser Cole of Fallon, Nev., December 1.

Nathaniel A. Thompson, M.D., Denver, to Miss Isabel McKenzie of Boulder, Colo., November 28.

Charles Henry Smith, M.D., Weston, Ore., to Miss Zona M. Sapp of Portland, Ore., November 26.

Henry F. Mikel, M.D., Columbia, Mo., to Mrs. Lida M. Ashton of Peabody, Kan., December 5.

James Albert Corscaden, M.D., to Miss Julia Thomas, both of New York City, December 16.

Nelle Malvina Cole, M.D., and George Owen Reed, both of Michigan City, Ind., November 29.

Warren J. Miller, M.D., to Miss Ina C. Bowman, both of Philadelphia, December 4.

Charles M. Raymond, M.D., Edgewood, R.I., to Mrs. A. C. Newell, November 8.

Deaths

William Henry Wishard, M.D., one of the oldest, most honored and best beloved practitioners of Indiana, died at his home in Indianapolis, December 9, aged 97. He graduated in medicine in the Indiana Medical College, La Porte, in 1849 and was given the ad eundem degree of M.D. by the Medical College of Indiana, Indianapolis, in 1877. He was one of the founders of the Indiana State Medical Society in 1849 and was the last survivor of its charter members. During the Civil War he served as surgeon of the 59th and 83d Indiana Volunteer Infantry. He was for many years a member of the American Medical Association, served as president of the Indiana State Medical Association in 1889 and as president of the Indianapolis Medical Society in 1891. It is said to have been through Dr. Wishard's efforts that President Lincoln issued the first order for the removal of soldiers, disabled by illness or wounds, from the seat of war to their Northern homes. He continued in active practice in Indianapolis until seven years ago and up to within a few months he attended meetings of the local medical society, where he was reverenced as a fine specimen of the old school doctor. The death of Dr. Wishard removes a stalwart pioneer in medicine of the Middlewest, a gentleman of the old school, a practitioner who stood for the highest ideals, and a friend always loyal and true. The Indianapolis Medical Society at a special meeting, December 11, adopted suitable resolutions regarding the death of Dr. Wishard.

John Green, M.D. Harvard Medical School, Boston, 1866; LL.D. (honorary) Washington University, 1905; University of Missouri, 1906; a member of the American Ophthalmological Society, and American Otological Society; ophthalmic surgeon to St. Luke's Hospital, St. Louis; professor of ophthalmology in the Medical Department of Washington University since 1886, and at the time of his death professor emeritus; a pioneer oculist of the Southwest; surgeon of volunteers during the Civil War; one of the founders of the American Ophthalmological Society, Harvard Club of St. Louis, St. Louis Archeological Society and St. Louis Academy of Science; died at his home in St. Louis, December 7, from pneumonia, aged 78.

Archibald Dixon, Jr., M.D. Bellevue Hospital Medical College, 1891; of El Paso, Tex.; vice-president of the Kentucky State Medical Association, health officer and formerly city physician of Henderson, Ky.; acting assistant surgeon U. S. Army; a specialist on diseases of the lungs; died at his home, October 31, aged 44.

Frank Le Moyne, M.D. University of Pennsylvania, Philadelphia, 1863; a member of the Medical Society of the State of Pennsylvania; brigade surgeon during the Civil War and brevetted lieutenant-colonel for conspicuous gallantry in action; once president of the Allegheny County Medical Society; chairman of the Pittsburgh Water Commission; a trustee of the Elizabeth Steel Magee Hospital; one of the founders of the Pittsburgh Hospital for Children and surgeon to that institution and the Western Pennsylvania Hospital; died at his home in Pittsburgh, December 1, aged 74.

Jerome Dwelly, M.D. Harvard Medical School, 1847; a member of the Massachusetts Medical Society; a practitioner of Fall River for more than sixty years; once president of the Bristol South District Medical Society; one of the witnesses of the original demonstration of ether anesthesia and the first to administer it in his own community; first city physician of Fall River; medical examiner of Bristol County for fourteen years; one of the finest types of the old-time practitioner; died at his home in Fall River, December 4, aged 90.

Rockwood Sager, M.D. Rush Medical College, 1879; a member of the Illinois State Medical Society; for thirty-four years a practitioner of Rockford; died at his home in that city, December 2, from brain tumor, aged 57. At a meeting of the Winnebago County Medical Society December 4, resolutions were unanimously adopted expressing regret at the death of Dr. Sager and sympathy for his family.

Harry M. Hayes, M.D. Rush Medical College, 1894; a Fellow of the American Medical Association, and President of the Peoria City Medical Society; formerly commissioner of health in Peoria; died in the Proctor Hospital in that city, December 2, from typhoid fever, aged 42. At a meeting of the Peoria City Medical Society, December 6, resolutions of regret and sympathy were unanimously adopted.

George Henderson, M.D. Howard University, Washington, D. C., 1885; a member of the Medical Association of the District of Columbia; formerly a member of the Association of Military Surgeons of the United States; a veteran of the Civil War; for twenty-three years Surgeon-General of the National Guard of the District of Columbia; died at his home in Washington, November 27, aged 70.

Warren Oscar Plympton, M.D. College of Physicians and Surgeons, New York City, 1888; formerly professor of surgery in the New York Postgraduate Medical School; attending surgeon to the Daisy Field Hospital, Englewood, N. J., and consulting surgeon to the Mary Immaculate Hospital, Jamaica, L. I., and the Tarrytown Hospital; died at his home in Westport, Conn., November 19, aged 55.

Nathaniel Heath Street, M.D. University of Virginia, Charlotteville, 1880; New York University, New York City, 1881; a member of the Medical Society of the State of North Carolina; died at his home in New Bern, December 1, from the effects of a gunshot wound of the brain, self-inflicted, it is believed with suicidal intent, while suffering from melancholia due to ill health, aged 56.

John Todd, M.D. Pennsylvania Medical College, Gettysburg, 1857; for fifty-six years a practitioner of Montgomery County, Pa.; for several years a burgess of Pottstown, and for nine years a member of the town council; president of the medical staff of Pottstown Hospital since the establishment of the institution; died at his home, October 27, from senile debility, aged 83.

Henry J. Evans, M.D. Hahnemann Medical College, Philadelphia, 1881; president of the Maryland State Homeopathic Society in 1899 and president of Maryland State Board of Medical Examiners in 1888; consulting physician to St. Luke's Hospital; formerly of Baltimore; died at his summer home in Hollidaysburg, Pa., November 30, from pernicious anemia, aged 58.

Frederick Ogden Marsh, M.D. Miami Medical College, Cincinnati, 1884; professor of chemistry and toxicology in his alma mater; of Cincinnati; who was committed to Longview Hospital, October 7, suffering from melancholia; died in that institution, November 24, from the effects of wounds believed to have been self-inflicted with suicidal intent, aged 54.

Hugh Spencer Williams, M.D. Northwestern University Medical School, 1894; LL.D., D.D., prominent as a clergyman of the Cumberland Presbyterian Church; died at his home in Memphis, Tenn., December 3, from nephritis, aged 68.

William Hutchinson Merrill, M.D. College of Physicians and Surgeons, New York City, 1887; formerly a practitioner of Jeckyl Island, Ga., and later of Pepperell, Mass.; died at his home in the latter city, December 2, aged 53.

Isaiah Carter Turner, M.D. Meharry Medical College, Nashville, Tenn., 1885; a well-known colored practitioner of Dayton, Ohio, and a member of the National Guard, who serve throughout the floods in April of this year; died at the hom of his father in Owensboro, Ky., December 1, aged 39.

William Ernest Miller, M.D. College of Physicians an Surgeons, Baltimore, 1892; a Fellow of the American Medica Association; a well-known practitioner of Northwestern Baltimore; died in the Franklin Square Hospital in that city November 23, from cerebral hemorrhage, aged 43.

Adolphus Woodville Dail, M.D. Tennessee Medical College Knoxville, 1891; a Fellow of the American Medical Association; for eleven years a practitioner of Cement, Okla.; die in the Washita Valley Hospital, Chickasha, Okla., Novembe 20, from tubercular peritonitis, aged 44.

Charles Edward Wachenschwanz, M.D. University of Jena 1850; formerly demonstrator of anatomy in Starling Medica College, Columbus, Ohio; a surgeon of volunteers during th Civil War; died at his home in Chillicothe, Ohio, November 7 from senile debility, aged 83.

Richard Cranch Greenleaf, M.D. Harvard Medical School 1870; a trustee of the Lenox Library and Lenox Academ and town assessor for several years; a member of the Massachusetts Medical Society; died at Lawrence, L. I., December 3 from heart disease, aged 68.

Evan S. Weisiger, M.D. Pennsylvania University, Lexington, Ky., 1852; surgeon in the Confederate service during th Civil War; for fifteen years state quarantine officer at th mouth of the Brazos River, Tex.; died at his home in Brazoria Tex., October 8, aged 83.

Thomas J. McClosky, M.D. *St. Louis College of Physician* and Surgeons, 1889; a member of the Wisconsin State Medical Society; formerly a practitioner of Prairie du Chien and Beloit; died at the home of his sister in Dubuque, Iowa November 28, aged 53.

Horace H. Tinker, M.D. New York Homeopathical Medical College, New York City, 1875; of New York City; died at his summer home in New London, Conn., November 20, from the effects of poison believed to have been self-administered with suicidal intent, aged 61.

Charles De Witt Rawson, Jr., M.D. Drake University, Des Moines, Ia., 1905; of Otley, Ia.; who was seriously injured in an automobile accident near Otley, November 13, died at his home in that city from the effects of his injuries, November 19, aged 31.

James Lawrence Turner, M.D. University of Georgetown. Washington, D. C., 1864; a veteran of the Civil War and for many years a practitioner of New York City; died at his home in Corona, Long Island, November 16, from pneumonia, aged 75.

Thomas Edwin Nott, Jr., M.D. Tulane University, New Orleans, 1885; formerly a practitioner of Spartanburg, S. C., but recently a resident of Brownsville, Tex.; died in that place, *November 24, from* tetanus due to a needle wound, aged 48.

Allen L. Woode, M.D. Hygeio-Therapeutic College of New York City, 1863; a resident of Flatbush, L. I.; *for thirty-five* years president of the Clinton Street Baths, Brooklyn; died in the Paul Kimball Hospital, Lakewood, N. J., October 25, aged 73.

Charles Young Moore, M.D. University of Toronto, Ont., 1871, and silver medallist of his year; for more than forty-five years a practitioner of Brampton, Ont., and medical officer of health of that place; died at his home, September 11, aged 66.

Anita E. Tyng, M.D. Woman's Medical College, Philadelphia, 1864; at one time a medical missionary in the Orient and formerly a member of the Rhode Island Medical Society; died at her home in Berkeley, Cal., October 16, aged 73.

H. G. Patterson (license, Kansas, 1901); a veteran of the Civil War; for thirty years a practitioner of northwestern Kansas; medical director of the Kansas State G. A. R. in 1907; died at his home in Rexford, November 29.

Dr. Charles Morton Clifford, M.D. Miami Medical College, Cincinnati, 1893; a Fellow of the American Medical Association; formerly a practitioner of Cynthiana, Ky.; died at his home in Le Roy, Ill., November 24, aged 46.

Alexander S. Cornell, M.D. Detroit College of Medicine, 1894; was instantly killed December 2, at his home in Copemish, Mich., by his own *automobile*, which he was cranking without having put the machine out of gear.

Woodson B. Fearing, M.D. University of Maryland, Baltimore, 1881; a member of the Medical Society of the State of North Carolina; of Manteo; died in the Sarah Leigh Hospital, Norfolk, Va., December 2, aged 54.

Robert Lyon Sanderson, M.D. Cleveland University of Medicine and Surgery, 1857; for many years medical officer of health for the township of Yarmouth, Ont.; died at his home in Sparta, Ont., September 23, aged 81.

John Gould, M.D. University of Michigan, Ann Arbor, 1890; for four years assistant superintendent of the Yankton (S. Dak.) State Hospital for the Insane; died at his home in Denver, Col., November 24, aged 55.

W. L. Simmons, M.D. Graffenburg Institute, Dadeville, Ala., 1858; for more than forty years a practitioner of Weatherford, Tex.; died in a sanatorium at Fort Worth, November 19, from senile debility, aged 81.

John J. Baker, M.D. Physio-Medical College of Indiana, Indianapolis, 1875; formerly of Westfield, Ind., and Indianapolis; died at the home of his daughter in Peru, Ind., October 20, aged 62.

Meredith Taylor (license, Missouri, 1883); formerly circuit court judge of Jasper County; died at the Odd Fellows' Home, Liberty, Mo., September 24, from cerebral hemorrhage, aged 63.

George Washington Wise, M.D. Medical College of Georgia, Augusta, 1861; for many years a practitioner of Trenton, S. C.; died in the Columbia, S. C. City Hospital, November 4, aged 74.

Ellsworth Henry Way, M.D. Cleveland University of Medicine and Surgery, 1874; founder of the Riverside (Cal.) Hospital; died at his home in Riverside, October 21, aged 52.

Salmon Stebbens Douglas, M.D. Chicago Homeopathic College, 1892; coroner of Delaware County, Iowa; died at his home in Earlville, November 28, of pneumonia, aged 45.

Thomas Henry Ullyot, M.D. University of Southern California, Los Angeles, 1908; died at his home in Pomona, Cal., November 7, from ptomain poisoning, aged 32.

William M. Edwards, M.D. University of Alabama, Mobile, 1880; died at his home in St. Elmo, Mobile County, November 26, from cerebral hemorrhage, aged 59.

Alfred Layman, M.D. Hahnemann Medical College, Philadelphia, 1882; died at his home in Philadelphia, December 6, from carcinoma of the stomach, aged 70.

Fleming B. Todd (license, Missouri, 1883); for more than forty years a practitioner of North Central Missouri; died at his home in Madison, September 18.

James H. Willis (license, fifty years' practice, Kentucky, 1895); a veteran of the Mexican War; died at his home in Lawrenceburg, November 10, aged 90.

Henry C. Williams (license, Michigan, 1900); for more than fifty years a practitioner of Morenci, Mich.; died at his home in that village, November 3, aged 79.

Leandre Coyteaux Prevost, M.D. Ecole de Médecine et de Chirurgie, Montreal, 1874; of Ottawa, Ont.; died at Saranac Lake, N. Y., November 6, aged 63.

Joseph G. Williamson, M.D. Bennett Medical College, Chicago, 1882; formerly of LaGrange, Ill.; died at his home in Montague, Mich., November 5.

Richard David Hailey, M.D. University of Louisville, Ky., 1909; died at his home in Olive Hill, Tenn., August 6, from pernicious malarial fever, aged 38.

John Oscar Stevens (license, Texas, 1898); of Hobbs; was shot and instantly killed while driving through Camp Springs, Tex., November 13, aged 46.

Clarence E. Frey, M.D. Hospital College of Medicine, Louisville, 1906; died at his home in Louisville, November 30, from pneumonia, aged 32.

Robert Charles Meyers, M.D. University of California, San Francisco, 1880; formerly of San Francisco; died in Los Altos, Cal., November 23.

Julius L. Schauer, M.D. College of Physicians and Surgeons, Baltimore, 1891; formerly of Milwaukee; died in Chula Vista, Cal., August 26, aged 48.

Gerald Waddell, M.D. McGill University, Montreal, 1907; of Montreal; died in Chatham, Ont., July 13, from carcinoma of the stomach, aged 29.

Calvin Lutz, M.D. Victoria College, Coburg, Ont., 1868; died at his home in Gananoque, Ont., September 14, aged 62.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE JIREH DIABETIC FOOD COMPANY

The Company Rises to Explain in a Brief Note of One Thousand Words

Exploiters of fraudulent and dangerous pharmaceutical products have no love for THE JOURNAL. When such products are exposed in these pages, their manufacturers seldom reply to the criticisms except through indirect channels. Then the replies are frequently replete with billingsgate and denunciation of THE JOURNAL and its editor, the Association and the medical profession generally.

We have, at different times, had to call the attention of the public and the medical profession to the fraudulence and dangers of some of the products of the Jireh Diabetic Food Company. We have shown that the Jireh company lied boldly and directly so long as it could do so without getting into the courts, and that it lies inferentially still; we have shown that Jireh flour had practically as much carbohydrate as ordinary flour; we have shown that, probably to escape prosecution under the Food and Drugs Act, the Jireh concern has coined the word "diatetic" and substituted it for the word "diabetic," which used to appear in its advertisements; we have shown that the claim made for the Jireh products that they are "starch-changed" was a false one, and that the company has modified this to "starch-treated," presumably to avoid being haled into the courts under the "pure food law"; we have shown, in short, the unreliability both of the Jireh concern and of its products.

Two or three weeks ago a New York physician wrote to THE JOURNAL for information regarding the Jireh products. We sent him such matter as had been published on the subject, and he showed this material to a patient who was using the Jireh products. The patient, in turn, expressed her opinion of the product to the retailer from whom she had been purchasing it. A day or two later she received a letter from the Jireh Diabetic Food Company, which, in spite of its length and discursiveness, we publish in full, so that physicians may know just what this company thinks of them. The letter, which is dated Nov. 20, 1913, really belongs in the "Knocks and Boosts" department, but its length prevents its use there. Here it is:

> "We learned through Mess. Cushman Co. that you are a constant user of Jireh Foods for some time past, and that recently a certain derogatory statement was brought to your attention relative to our product. We feel an explanation is due you for two reasons.
>
> "First, because we want you to continue using Jireh Foods and thus receive the benefits of the same; and second, that the remarks called to your attention are not only libelous, but are in no way pertinent enough to detract from the value of our product. In the first place, we want to state that the particular journal in question has been endeavoring to injure our business for some time past and that we are not the only descent [*sic*] manufacturers of foods that are suffering in this way at the hands of the editors of this particular magazine. Since you are interested in the Jireh Foods, you may be more interested to learn why this particular magazine is so anxious to injure our reputation. The reason is very obvious if you will take into account the fact that this magazine is the official journal of the medical association of this country which is known as the backer of the medical trust. It is very clear to you, no doubt, that there are some physicians, particularly those that are associated with the magazine, who are anxious to stamp out of existance [*sic*] such concerns that offer a bona fide product, a meritorious product which actually produces the required results without the aid of medicine.
>
> "For the particular maladies for which we offer our foods, we have been very successful, consequently the antagonism on the part of this particular journal is the logical thing. In addition to this, however, and perhaps more important to us, is the fact that the editors of this magazine have made it known to us that they will not approve of our product until such time that

we care to be dominated by the moving influence of the magazine in question. They want us to supply them with the private formula which we use for manufacturing our foods and to enlighten them and show them the various processes applied to our products to produce the required results. As a bona fide and ethical business house, we absolutely and unqualifiedly refuse to comply with this wish, and will always refuse to do so, no matter how often they may attack us. We stand strictly upon principle in this matter and propose to run our business in our own way, and will not, under any circumstances, allow a magazine or anybody else dictate to us under what conditions we are allowed to do our business.

"The remarks which they make would perhaps hurt us some if they emanated from a source that was qualified to judge the merits of our food. The absurd side of the issue, and perhaps the comical side of it, is the fact that the honorable gentlemen who assume to condemn a product, know less about the disease for which the product is offered, and much less about diet and foods than the average layman. Consequently, we consider it simply absurd to allow them to step into our business and dictate policy to us. This is the gist [*sic*] of the discontent that prevails between the magazine editors and ourselves, and as long as we refuse to comply with their wish, we certainly cannot expect them to speak well of us. It has become a notorious fact in the medical profession that their criticisms are almost valueless, inasmuch as they stop at nothing in order to create sensationalism, and have attacked not only ourselves, but every bona fide manufacturer of foods and drugs in this country who has refused to fall in line with them.

"This explanation, we trust, will appeal to your good judgment and will convince you of what is said about us is untrue. Furthermore, our business has grown to colossal proportions, notwithstanding their endeavors to crush us. We call your attention to a most peculiar fact: that is, that they make no comment whatsoever as to the product and its therapeutic value in the treatment of diabetes. You notice they make an awful play on our literature, which was changed merely to suit conditions in business. We also wish to call your attention to another peculiar fact, and that is that a great majority of the physicians who are in with this magazine readily recommended our foods, and we also believe that your physician, after reading this letter, will feel the same way as most physicians do in relation to our foods. We believe that your physician is perfectly willing to be convinced that our foods are as represented to be, and the very best clinical evidence as this is the effect our foods have had upon you. Finally, if the foods are palatable and wholesome and have alleviated the annoying symptoms of Diabetes, then why should you be guided by the opinions of demagogues and yellow journalists?

"You may be pleased to learn that our foods have received the attention of Dr. Wiley, the well-known chemist and food scientist of this country, and we have now in our possession his reports showing the very high standard of our foods. This, in our opinion, is of more consequence than all the harangue which those venerable gentlemen of the magazine may indulge in.

"We want to convince you without an atom of doubt that we are honest and bona fide in everything we say, and we extend to you a hearty invitation to call at the first opportunity and shall be glad to tell you anything you may wish to know. Thus awaiting the pleasure of this visit, we beg to remain

"Yours very truly, Jireh Diabetic Food Co."

We learn from this letter that The Journal's "remarks" on the Jireh product are "libelous." We have made them many times and for several years past; if libelous, the manufacturer has excellent grounds for damages. We learn, too, that our remarks "are in no way pertinent enough to detract from the value" of the Jireh products. Why, then, take any notice of them? We learn, moreover, for the hundred-and-first time, that The Journal is the official organ of the "medical trust," and we are told that "there are some physicians" that are opposed to the Jireh Foods because these products cure diabetes without the use of medicine! The Journal, so the company says, wants the Jireh Diabetic Food Company to supply its "private formula" and to show the "various processes" by which the Jireh products are made. Such statements indicate that the Jireh Diabetic Food Company does not confine its mendacity to the mere advertising of its product, where the necessity for lying is naturally great.

The ambiguous remarks regarding Dr. Wiley are evidently intended to convey the idea that the doctor approves of the Jireh products. Dr. Wiley was sent a copy of the Jireh letter and his attention directed to the statements appearing therein regarding himself. He replied:

> "In regard to the Jireh products and their claims that our reports show the very high standing of their foods, I would say that I consider such a claim entirely false. . . . We did examine five or six products in our own laboratory, however, and found them to be of very fair composition per se, but *not of a composition that afforded any legitimate basis for their claims. We entirely disapproved . . . three of the products making special claim as to their fitness for diabetics.* [Italics ours.—Ed.] These were the Wheat Nuts, the Jireh Flour and the Patent Barley. Two of the other products were passed with a non-committal rating, which means that they are not actually disapproved, but the star marking is not accorded. These products were the dietetic Rusks and the Macaroni. For the latter especially no specific claims seem to be made. We called attention, however, to the generally objectionable juggling of terms indulged in by this company. . . ."

The Jireh concern says that in spite of the efforts of The Journal to "crush" it, "our business has grown to colossal proportions." Of this the New York physician who sends us the letter says: "Their 'colossal proportions' must have received a slight jar or they would not have taken time to write such a letter."

The following medical journals carry the advertisements of the dangerous and fraudulent Jireh products:

Dietetic and Hygienic Gazette	*Pediatrics*
Medical Times	*Medical Herald*

DOWD'S PHOSPHATOMETER

Dowd's Phosphatometer, according to its inventor, is a device "for taking the phosphatic index or pulse of the nervous system." Its originator, J. Henry Dowd, M.D., Buffalo, N. Y., writes enthusiastically of his instrument:

> "Physicians who use the Phosphatometer are sending 50 per cent. less patients away for consultation, getting 75 per cent. better results at home, because the Phosphatometer tells the cause and what to do, and the Comp. Phosphorus Tonic gives results in 80 per cent. of all conditions of illness."

The "Comp. Phosphorus Tonic" referred to in the above quotation is a sideline of Dr. Dowd's, put out by the Richardson Company of Buffalo. The stationery of the Richardson Company gives its address as 334 Franklin Street, but directs that all communications be addressed to 40 North Pearl Street, which is the private address of J. Henry Dowd. According to the Buffalo directories, 334 Franklin Street is the drug store of Arthur E. Reimann.

To those who read the Dowd "literature," the Phosphatometer will appear to be either one of the wonders of the age or an unscientific absurdity. To the thinking man it will be the latter. It pretends to determine the amount of phosphates in the system. This is accomplished—alleged—by taking the second urine passed in the morning and mixing a portion of it in the instrument with a solution which is the well-known magnesia mixture. The height to which the crystals settle in ten minutes determines, according to Dowd, the amount of phosphates! Was ever a test devised that violated more of the first principles of quantitative chemical analysis? If so, we never heard of it. Dowd's system does not require any determination of the amount of urine passed in twenty-four hours or even of the amount passed at the second micturition in the morning.

If a patient whose urine was being "tested" by the Dowd method, should drink two cups of coffee for breakfast instead of one, his urine might be so dilute that the phosphates would fall below the "normal" mark. Dowd says that his Phosphatometer "takes the pulse of the nervous system." What about the patient who eats several eggs or consumes a sweetbread or other nuclein-containing articles of diet? The increased amount of phosphates in such a diet might easily lead to an apparent excess in the urine. Every physician, nay, every sophomore medical student, knows that the amount and kind of food ingested governs almost entirely the amount of phosphates excreted in the urine.

What actually does "Dowd's Phosphatometer," when used according to instructions, show? It shows the *presence* of phosphates in the urine; it permits a guess—with not the slightest claim to accuracy—as to the amount in the specimen tested; it gives no possible clue to the normal or abnormal relation of the phosphates in the urine or as to whether the source of the crystals precipitated is the nerve tissue or the food. Yet here are some of the claims made for it:

> "The Phosphatometer shows nervous metabolism the same as the ureometer shows muscular; the former errs in about 3 per cent.; the latter in 40 per cent."
>
> "The Phosphatometer shows the amount of nerve food being used and present in the nerve cells."
>
> "Over 50 per cent. of pain and human suffering is due to the nerves crying for food; the Phosphatometer will show the true cause in ten minutes."
>
> "The Index not only tells the present condition, but foretells the future, thus preventing serious complications which might arise."
>
> "The Phosphatometer measures the amount of phosphorus in the system."
>
> "The Dowd Phosphatometer not only takes blood-pressure, it tells how to regulate it."
>
> "The Phosphatometer measures the amount of phosphorus in the nerve cells; it is as positive in nerve troubles as the x-ray in fractures."

These claims are essentially false. As a matter of fact, a simple examination of the urine for phosphates cannot tell us the condition of the nervous system. This must be evident from the fact that only a portion of the phosphates is excreted in the urine, a very considerable part passing out with the feces. Further, the bulk of the phosphorus excreted comes from the food and only a small portion from the waste of the nervous system. The amount excreted by the urine which comes from torn-down nerve tissue is so small that it is practically impossible to estimate variations in it even by the most careful analytic methods.

In brief, Dowd's "scientific method" is nothing more than unscientific humbug.

PULMONOL

Some Facts from the Inside

The letter that follows was received a few days ago:

"*To the Editor.*—I congratulate you on the article which appears in The Journal, Nov. 29, 1913, on Pulmonol.

"I have been fiscal agent for several companies, and some three years ago I was persuaded to take up the floating of Pulmonol. I did this after investigating and coming to the conclusion that the medicine was all that was claimed for it. I had not been in the business very long, however, before I found out that I had been deceived.

"The first case you mention, which was supposed to be so wonderful that the Committee on Tuberculosis was asked to investigate, was my first eye opener. Some time after this woman's death her daughter came to the office insisting and then *pleading* that the testimonial be discontinued, but Dr. Payne absolutely refused. Feeling how manifestly unfair it was to give the name of a dead person as a testimonial for the medicine was one of the reasons for my quarrel with the "medical director" and for my getting out of the concern.

"Some months after I left him, he continued to use this testimonial, advertising it considerably in and around New York. I drew the attention of the editor, whom I knew, of one of the newspapers in which the ad. was appearing, and he immediately discontinued it. Riker & Company, under whose name the advertisement appeared, also insisted that Dr. Payne omit this testimonial from his circulars in future.

"Pulmonol is being pushed very much in and around New York, and I think your article ought to be reprinted and spread broadcast and so help those poor people who have been deluded into believing that it really aids them in fighting the disease.

"I do not know whether or not your Journal is published for medical men alone. If not, I wish you would send me three copies, for which I will forward you forty-five cents on hearing from you. I would like to bring the article before Riker & Company, for I know this to be a reputable concern and I do not think they would longer stand behind and push a medicine like this after reading an article so convincing as yours of its fraudulent character.

"Ranson Caygill, 82-90 Beaver St., New York City."

The information contained in this letter is interesting and instructive, but that is not the reason we are publishing it. We are bringing it to the attention of our readers because it is typical of letters that come almost daily to this office from laymen who are interested in the work The Journal is doing in exposing medical frauds on the public. This phase of the propaganda work is encouraging and fruitful of good results. It is in the "ethical proprietary" field that come the greatest discouragements. The "proprietaries" sold to physicians, which The Journal is exposing, are in every case a disgrace to scientific medicine and in many cases, at least, just as fraudulent as the various "patent medicines." Yet physicians do not exhibit anything like the enthusiasm over exposures of this sort of thing that they and the public show in the case of "patent medicines." This attitude is an unworthy one. Sooner or later the knowledge that the public is gaining regarding "patent medicine" frauds will cause it to focus its attention on the proprietary evil as it affects the medical profession. When that time comes will it be shown that the physicians of the country have cleaned house? If not, the profession will suffer a loss of confidence on the part of the more intelligent portion of the public that will not easily be regained.

Correspondence

Method of Sterilizing Rubber Gloves

To the Editor:—The method of sterilizing rubber gloves by two tablets (weight not given) of mercuric cyanid in 4 ounces of alcohol and 4 ounces of talc (time not given) is acknowledged by Dr. Ray Ernest Smith (The Journal, Nov. 15, 1913, p. 1831) to be "theoretically" inefficient; but he says that the gloves "practically surely seem" to be sterile. There are no degrees of sterility of gloves; gloves are either sterile or not sterile and all gloves must be considered contaminated until they are sterile.

Mercuric cyanid is useless as a germicide, as may be seen by any one sufficiently interested to read Harrington's article (*Boston Med. and Surg. Jour.*, Jan. 14, 1904). He tested the cyanid in all strengths and mixtures and found that in a 1:500 solution it had no effect on the staphylococcus after thirty minutes. He concluded that in the strength recommended, 1:1,000, it did not destroy known pus organisms in three hours and that it was an inefficient germicide.

Dr. Smith asserts that hot water and soap followed by alcohol and cyanid are sufficient to sterilize gloves for obstetric work. He states that "some of our famous surgeons" use washing, followed by alcohol, to sterilize their hands. Schumberg (*Arch. f. klin. Chir.*, 1906, lxxix, 1) found that in most cases the hands showed more bacteria than before scrubbing, which he ascribed to the bringing of bacteria to the surface from the gland crypts, and that subsequent bichlorid scrubbing did no good. He found a fat solvent of benefit. Aperlo (*Clin. Chir.*, 1913, xxi, 331) concluded that continued washing with warm water and soap, using a sterile brush, was not sufficient to remove germs from the hands, and that the result was no better if the washing was continued for an hour. How, then, does Dr. Smith expect to rinse his gloves clean with hot water?

Alcohol is a poor germicide. Koch grew spores after 110 hours in alcohol. Goenner grew the streptococcus after fifteen minutes in alcohol, and Senger the *Staphylococcus aureus* after twenty minutes. An evidence of its weak action is the large percentage of alcohol required to preserve various proprietary liquid foods, in which it is used only as an antiseptic and not as a germicide. I have frequently recovered organisms from the previously infected hand after five minutes' immersion in alcohol, and Schumberg states that the reduction of the bacteria is only quantitative and not absolute.

All skin germicides should be fat solvents in order to penetrate the sweat-glands and hair-follicles. Organisms may reside within these and the entrance be blocked with fat, or they may exist within the fat itself. Alcohol is not a good fat solvent; it dissolves the fatty acid, but *not* the glycerid in which form the fat in the skin always exists. This is one reason why alcohol is not a good skin germicide. The concentration of alcohol is of no importance; it is too weak germicidally to matter whether it is 70 or 95 per cent.

I would repeat my advice that gloves should be boiled in water (fifteen minutes is sufficient) or glycerin or put in the steam sterilizer for thirty minutes at 120 C. (248 F.) with 15 pounds' pressure. The mercuric salts and alcohol are useless for the disinfection of rubber gloves.

Ellice McDonald, M.D., New York.

The Truth About Ozone

To the Editor:—Hardly a month passes without some request coming to this laboratory concerning ozonizers and the uses of ozone for ventilating purposes. It was therefore encouraging to read the recent article of Drs. Jordan and Carlson (The Journal, Sept. 27, 1913, p. 1007) on the properties of ozone, as well as that of Sawyer, Beckwith and Skolfield (*ibid.*, p. 1013), concerning tests on ozone machines. These give the most definite data yet published on the subject. During the past year I have had several opportunities to see installations of these machines in a number of places. Invariably the odor of ozone could be detected only close to the machine. As the odor in very small quantities can be so readily noticed, this means that the gas was not being distributed far from its source. In some places good results were claimed for the machine. It has been my opinion that these results can be fully accounted for by the increased circulation of air in the room caused by the fan in the machine, as you have suggested in a recent editorial (The Journal, Sept. 27, 1913, p. 1045).

One instance of definite results may be of interest. An ozonizer was installed in a room in which it was necessary to exclude even small quantities of dust and dirt on account of the purpose to which the room was put. It was hoped that the ozone would relieve the usual stuffy condition. The irritating effects of the ozone were so great that the workmen refused to stay in the room unless the machine was removed.

It seems as if the positive results obtained by Jordan and Carlson and Sawyer were such that further data are unnecessary, and that we can finally give up the fallacy that ozone is of use in air purification.

John F. Norton, Laboratory of Sanitary
Chemistry, Massachusetts Institute of Technology, Boston.

Stethophone, Not Stethoscope

To the Editor:—Hippocrates employed immediate auscultation. Laënnec conceived the idea that mediate auscultation is practicable, and first used a roll of paper between his ear and the patient's chest. Later he constructed the monaural stethoscope, which is still the favorite instrument of many clinicians in Europe.

From the days of Laënnec (1816) up to the present, for the last ninety-seven years, the instrument has been called the stethoscope. The word is of Greek origin. It is compounded of *στῆθος*, breast, chest, and *σκοπέω* inspect, see. The word "stethophone" would be compounded of stethos and the suffix phone, which means sound or voice.

In the days preceding the ophthalmoscope, the auriscope, cystoscope, gastroscope, bronchoscope or the phoneidoscope, and in the days preceding the telephone, graphophone, dictaphone and microphone, the word stethoscope need not perhaps have been criticized; but in the present day I believe it is just as well that our classification be correct. It is clear then, that the name of instruments by the use of which we see, when the proper terminology is used, end in the suffix "scope," while the name of instruments by the use of which we hear, should end in the suffix "phone." In this connection, the phoneidoscope, an instrument to make visible the effect of sound, bears a very instructive name. We may find ourselves reluctant. to give up an error which can soon celebrate its centennial, but if a stethophone it is, "why then miscall it?"

Joseph H. Barach, M.D., Pittsburgh, Pa.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DRESSING FOR LABORATORY TABLES

To the Editor:—Please publish the formula for the dressing for laboratory tables which makes them acid- and stain-proof. This formula appeared in The Journal some time ago but I am unable to locate it.

William H. Deaderick, M.D., Hot Springs, Ark.

Answer.—The formula for the ebonizing preparation said to render laboratory tables resistant to staining or corroding chemical reagents calls for two solutions as follows:

Solution A:	
Copper sulphate and potassium chlorate, each	125 gm.
Water	1,000 gm.
Boil till salts are dissolved.	
Solution B:	
Anilin hydrochlorid	150 gm.
Water	1,000 gm.
or:	
Anilin	120 gm.
Hydrochloric acid	180 gm.
Water	1,000 gm.

Two coats of Solution A are applied while hot, the second as soon as the first has dried. Two coats of Solution B are applied and the wood allowed to dry thoroughly. Next a coat of raw linseed oil is rubbed in by means of a cloth to give a polish. In the treatment with the oil, the deep black color is partially brought out, but this does not uniformly appear until the table has been thoroughly washed with hot soapsuds. This latter treatment removes superfluous chemicals. To keep the table in condition it is said to be necessary only to wash off occasionally with soap and water and then to rub with oil. The cost of both solutions will not be over 50 cents. The amount is sufficient for ten square yards of surface.

KOWARSKY BLOOD-TEST FOR DIABETES

In The Journal, Nov. 22, 1913, p. 1921, we published through error the Kowarsky test for sugar in the urine instead of the test for differential diagnosis of diabetes. The method of Kowarsky is a modification of that of Bertrand, the principle of which is the reduction of a copper solution by the sugar-containing liquid and solution of the cuprous oxid in an acid solution of ferrous sulphate which causes the separation of an equivalent amount of ferrous oxid, the quantity of which is determined by titration with potassium permanganate.

The technic is substantially as follows: Two flask-shaped tubes graduated with two marks indicating 0.5 and 1 c.c. contents are filled to the lower mark by means of a capillary pipet with a 2 per cent. sodium fluorid solution. Blood carefully drawn from the finger-tip is added to the upper mark, foam being removed by a drop of ether. The mixture is removed to a centrifuge tube with two marks, and the rinsings of the tube added up to the lower mark (5 c.c.). A little powdered sodium tartrate is dissolved in the liquid, 4 c.c. of a dilution of liquor ferri dialysati (1:1) are added. the tube corked, shaken and let stand for five minutes. It is then filled to the mark with liquor ferri dialysati, well shaken and centrifuged for from five to ten minutes. 2 c.c. of a solution containing copper sulphate, 0.8; pure glucose, 0.1, and water, 200, is mixed with 2 c.c. of one containing sodium tartrate, 40; sodium hydroxid, 30, and water, 200. in a small Erlenmeyer flask (of from 30 to 40 c.c. capacity) and exactly 5 c.c. of the clear liquid in the centrifuge added. The mixture is heated to boiling, boiled gently for three minutes and cooled by letting the flask stand in water five minutes. The mixture is filtered through a carefully tested asbestos filter by means of a filter pump. The residue is thoroughly washed, care being taken that the cuprous oxid remains on the superficial layer of the filter. The filter pump is detached, the cork bearing the filter is placed in the Erlenmeyer flask, and the cuprous oxid dissolved through the filter in 3 c.c. of the following solution: ferrous sulphate, 10; sulphuric acid, 40, and water, 200. The filter is washed until filtrate and washings equal not more than 10 or 12 c.c., which are then titrated with a 1:2,000 potassium permanganate solution until a distinct rose color remains.

The results are calculated in the following way: The number of cubic centimeters of permanganate solution used in the titration multiplied by 0.91 gives the amount of copper. The amount of sugar corresponding to the amount of copper is given in the accompanying table:

Sugar	Copper	Sugar	Copper
1.0	1.95	2.3	4.45
1.1	2.15	2.4	4.65
1.2	2.35	2.5	4.80
1.3	2.55	2.6	5.00
1.4	2.75	2.7	5.20
1.5	2.90	2.8	5.40
1.6	3.10	2.9	5.60
1.7	3.30	3.0	5.75
1.8	3.50	3.1	5.95
1.9	3.70	3.2	6.15
2.0	3.85	3.3	6.35
2.1	4.05	3.4	6.55
2.2	4.25	3.5	6.70

From this amount 1 mg. must be subtracted as being the amount already present in the solution used. The amount obtained by this subtraction corresponds to the amount present in 0.25 c.c. of blood, as only half of the amount of blood taken was used in the titration.

The whole process can be carried out in not more than thirty or forty minutes. Like every other quantitative method, it requires a certain amount of practice. Beginners should first learn to determine the amount of sugar in the solution used. (See *Deutsch. med. Wchnschr.*, Aug. 21, 1913, p. 1635.)

COMPLEMENT-FIXATION TEST FOR GONORRHEA

To the Editor:—1. Is the complement-fixation test for gonorrhea supposed to disappear as a case of gonorrhea, or a complication, progresses toward recovery?

2. Kindly give me a few references covering this point.

O. J. MINK, M.D., Bremerton, Wash.

ANSWER.—1. According to the gonorrhea complement-fixation test, the antibodies can be present for at least two years after infection, but we find no record of a single positive reaction occurring after two years.

2. The following are references for the past two years:

Rockwood, H. L.: Complement-Fixation Test in Gonorrhea, *Cleveland Med. Jour.*, January, 1913; abstr., THE JOURNAL, March 1, 1913, p. 697.

Owen, R. C., and Snure, H.: Complement-Fixation Test in Diagnosis of Gonorrhea, *Jour. Michigan State Med. Soc.*, May, 1913; abstr., THE JOURNAL, May 24, 1913, p. 1666.

Value of the Complement-Fixation Test in Gonorrhea, THE JOURNAL, Queries and Minor Notes, March 23, 1912, p. 881.

Gonorrheal Complement-Fixation Reaction, THE JOURNAL, Society Proceedings, April 27, 1912, p. 1307.

McNeill, A.: Complement-Fixation Test for Gonorrhea, *Arch. Pediat.*, September, 1913.

Lespinasse, V. D., and Wolff, M.: Clinical Value of Gonorrhea Complement-Fixation Test, *Illinois Med. Jour.*, January, 1913.

O'Neil, R. F.: Results of Complement-Fixation Test for Gonorrhea at Massachusetts General Hospital, *Boston Med. and Surg. Jour.*, Oct. 3, 1912.

URIC ACID TESTS—VALUE OF SODIUM CACODYLATE—PALATABLE ADMINISTRATION OF OLEORESINA ASPIDII—STRENGTH OF PHENOCO—VARIOUS PROPRIETARIES

To the Editor:—1. Is there any test other than a complicated quantitative analysis by which a physician can determine whether or not there is an excessive amount of uric acid in the urine?

2. Has Deschien's Syrup of Hemoglobin been accepted for the N. N. R.? Is it an ethical proprietary or a secret formula fraud?

3. What value has sodium cacodylate hypodermically? Is it of any value as a "tonic"—as a hematinic?

4. What is your opinion of Electrargol, Electraurol, Electroplatinol?

5. How can oleoresina aspidii be administered palatably to a child unable to swallow capsules?

6. I have been in the habit of storing tubes of catgut, glass catheters and rubber gloves, also of cooling instruments in phenol 5 per cent., or bichlorid 1:1,000. What strength of "phenoco" should be used for equal effect, or will it not take the place of the others?

M. D. L.

ANSWER.—1. The amount of uric acid can be determined in a convenient way, sufficiently accurate for most clinical purposes, by means of Ruhemann's method with an instrument known as the "uricometer," or by the "purinometer" introduced by Hall. These methods may sometimes be serviceable in practice. The technic is described in recent works on laboratory diagnosis. Usually it will be necessary to know the amount of purin nitrogen that is being ingested, or to place the patient on a purin-free diet before making the estimation.

2. We have no information regarding Deschien's Syrup of Hemoglobin. It is a proprietary product.

3. Sodium cacodylate has the effects of preparations of arsenic in general, and might be used in the same way as other arsenic compounds as a tonic and hematinic. (See N. N. R., 1913, p. 239.)

4. Electrargol, Electraurol and Electroplatinol are preparations of colloidal metals. The claims made for them appear to be very optimistic.

5. Oleoresina aspidii may be given in an emulsion made up with simple elixir and acacia in which from 5 to 10 minims are contained in 1 dram.

6. Phenoco is said to be about fifteen times as strong as pure phenol. Hence, if you use phenol in a 5 per cent. solution, a solution of phenoco 1:300 should give an equal effect.

COMPOSITION AND USE OF GIEMSA STAIN

To the Editor:—Please give directions for making up the Giemsa stain, and its use.

E. S. HALL, M.D., McLeansboro, Ill.

ANSWER.—The formula of the Giemsa stain is as follows:

Azur II—eosin	3.0 gm.
Azur II	0.8 gm.
Glycerin (C. P.)	250.0 c.c.
Methyl alcohol (C. P.)	250.0 c.c.

Grind up the dyes in the alcohol and then add the glycerin. Fix the films in methyl alcohol, and stain for five minutes in a mixture of 14 drops of the stain to 10 c.c. of distilled water. If necessary, a trace of sodium carbonate may be added to the water to intensify the basic stains. Wash in water, dry, and mount.

GREEN PLANTS IN THE SICK-ROOM AT NIGHT

To the Editor:—1. Is it advisable to remove living green plants from the sick-room at night?

2. If so, why only at night?

R. M. C.

ANSWER.—1. As a rule, living plants will do no harm in a sick-room even at night. In some cases, however, they give off ethers which may have an unfavorable influence on sensitive persons. It is usually stated that they give off carbon dioxid at night, but the amount of carbon dioxid thus added to the air of a room is not likely to be a serious detriment.

2. No harm can be attributed to the ordinary, or daylight, metabolism of plants, which consists in decomposing carbon dioxid and giving off oxygen.

TREATMENT FOR URTICARIA AND PRURITUS IN HYPERTHYROIDISM

To the Editor:—Please suggest treatment for urticaria and the attendant pruritus in a case of hyperthyroidism.

H. P. ASHE, M.D., Pittsburgh, Pa.

ANSWER.—Attention should be given chiefly to the underlying condition of the thyroid. The digestive organs should be kept in as good order as possible. Rest and quiet should be insisted on. Nervous sedatives might be tried. Calcium chlorid is recommended as a remedy in urticaria and would be worthy of a trial. Local alkaline baths or washes and the various antipruritic agents, such as 1 to 2 per cent. solutions or ointments of phenol (carbolic acid) or menthol, are appropriate.

DISINFECTION BY FORMALDEHYD AND BY SULPHUR

To the Editor:—1. What is the best and most efficient method for disinfecting infected rooms for tuberculosis, typhoid and other contagious diseases?

2. Is burned sulphur a good disinfectant in a closed room?

S. P. HAND, M.D., Demopolis, Ala.

ANSWER.—1. Disinfection with vapors of formaldehyd is regarded as a most efficient method of disinfection at present.

2. Burning sulphur in a closed room in the proportion of 3 pounds of sulphur per thousand cubic feet is a fairly efficient method of disinfection, provided that the surfaces and material to be disinfected are thoroughly wet.

TRAINING SCHOOL FOR MALE NURSES

To the Editor:—Please give the address of a training-school for male nurses. I have been a nurse for a number of years and wish a chance to perfect myself in my chosen work.

ARTHUR WILSON, Redland, Fla.

ANSWER.—So far as we can ascertain there is no school for general nursing in the United States to which men are admitted.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 13. Chairman, Dr. W. H. Sanders, Montgomery.

Arizona: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

Colorado: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Illinois: The Coliseum Annex, Wabash Ave. and 16th St., Chicago, Jan. 14-16. Acting Sec., Amos Sawyer, Springfield.

Indiana: Room 56 State House, Indianapolis, Jan. 13-15. Sec., Dr. Wm. T. Gott, 56 State House, Indianapolis.

Iowa: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

Minnesota: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.

New Hampshire: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.

New Mexico: Santa Fe, Jan. 12. Sec., Dr. W. E. Kaser, East Las Vegas.

North Dakota: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.

Oklahoma: Oklahoma City, Jan. 13. Sec., Dr. John W. Duke, Guthrie, Okla.

Oregon: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., *Portland.*

South Dakota: Capitol Bldg., Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.

Vermont: Montpelier, Jan. 13-15. Sec., Dr. W. Scott Nay, Underhill.

Washington: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

Wisconsin: Madison, Jan. 13. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

Illinois September Report

Mr. Amos Sawyer, acting secretary of the Illinois State Board of Health, reports the written examination held at Chicago, September 24-26, 1913. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 136, of whom 87 passed and 45 failed. Three candidates did not complete the examination and one withdrew. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Examined
Georgetown University School of Medicine	(1913)	1
Bennett Medical College	(1912,3) (1913,8)	11
Chicago College of Medicine and Surg.	(1911) (1913.25)	26
Hahnemann Med. Coll. and Hosp., Chic.	(1912) (1913,2)	3
Hering Medical College	(1913)	1
Jenner Medical College	(1911) (1913,2)	3
Northwestern University	(1903) (1910) (1913,3)	5
Rush Medical College	(1902) (1912) (1913,8)	10
University of Illinois	(1912,2) (1913,13)	15
College of Physicians and Surgeons, Keokuk	(1877)	1
Drake University College of Medicine	(1913)	1
Tufts College Medical School	(1912)	1
American Medical College, St. Louis	(1913)	1
St. Louis University School of Medicine	(1913)	1
Washington University, St. Louis	(1913.2)	2
Medical College of Ohio	(1895)	1
Jefferson Medical College	(1912)	1
Meharry Medical College	(1911)	1
University of Texas	(1913)	1
Marquette University, Medical Dept.	(1913)	1

FAILED

College	Year Grad.	Total No. Examined
Bennett Medical College	(1912,2) (1913)	3
Chic. Coll. of Med. and Surg.	(1910) (1911,3) (1913,9)	13
Coll. of Med. and Surg., Physio-Med., Chicago	(1910)	1
Hahnemann Med. Coll. and Hosp., Chicago	(1911) (1912)	2
Hering Medical College	(1913)	1
Illinois Medical College	(1910)	1
Jenner Medical College	(1912,2) (1913,2)	4
National Med. University, Chicago	(1903) (1904) (1909)	3
Reliance Medical College, Chicago	(1911)	1
University of Illinois	(1913)	1
Hospital College of Medicine, Louisville	(1904)	1
University of Louisville	(1907)	1
American Medical College, St. Louis	(1913)	1
Barnes Medical College	(1899) (1905) (1906) (1910)	4
St. Louis College of Physicians and Surg.	(1908) (1910)	2
Medical College of State of South Carolina	(1902)	1
Meharry Med. Coll.	(1904) (1908) (1910) (1911) (1913)	5

New Jersey October Report

Dr. H. G. Norton, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, Oct. 21-22, 191[illegible]. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 38, of whom 32 passed and 6 failed. Twenty-six candidates were licensed through reciprocity since July 29, 1913. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Georgetown University	(1913)	77.3
Howard University	(1912)	81.4
University of Louisville	(1910)	75.5
University of Maryland	(1910)	75.5
Harvard Medical School	(1912)	77.9
Dartmouth Medical School	(1912)	80.6
Columbia Univ., College of Physicians and Surg.	(1911)	77.5
Fordham University, College of Medicine	(1911)	77
Long Island College Hospital	(1911) 83; (1913) 81.2	82.5
New York Homeopathic Medical College and Hospital	(1912)	75.1 77.4; (1913) 75.5; 75.6; 84.
University and Bellevue Hospital Medical College	(1913)	76.7; 79.5; 79.7; 81.8; 83.
Jefferson Medical College	(1910) 88; (1912) 75; 81.9; (1913)	75; 76.3; 81.5.
University of Pennsylvania	(1911) 81; (1912) 85; (1913)	75.9
University College of Medicine, Richmond	(1912)	76
University of Virginia	(1913)	83.7

FAILED

College	Year Grad.	Per Cent
College of Physicians and Surgeons, Baltimore	(1911)	73
New York Homeopathic Med. Coll. and Hospital	(1913)	72
University and Belleve Hospital Medical College	(1913)	73.7, 73.7
University of Naples	(1893) 57.7; (1895)	68.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Howard University	(1905)	Dist. Colum.
University of Louisville, Medical Dept.	(1889)	Kentucky
Baltimore Medical College	(1901)	W. Virginia
College of Physicians and Surgeons, Baltimore	(1900)	Penna.
University of Maryland	(1911)	W. Virginia
Boston University, School of Medicine	(1883)	New York
Columbia University, College of P. and S.	(1898)	New York
Cornell University	(1910) New York; (1910)	New York
Eclectic Med. College of the City of New York	(1903)	New York
Long Island College Hospital	(1909) New York; (1912)	New York
New York Med. College and Hospital for Women	(1899)	New York
Hahnemann Medical College and Hospital, Philadelphia	(1911) Pennsylvania; (1912)	Pennsylvania.
Jefferson Medical College	(1907)	Penna.
Medico-Chirurgical College of Philadelphia	(1902)	Penna.
Woman's Medical College of Pennsylvania	(1902)	Indiana
University of Pennsylvania	(1897 Pennsylvania; (1899) Pennsylvania; (1907) Pennsylvania; (1912) Pennsylvania; (1912)	Pennsylvania.
University of Vermont	(1912) Vermont; (1912)	Vermont
Medical College of Virginia	(1909)	New York

The following questions were asked:

ANATOMY

1. Name the valves of the heart; give location, structure and function of each. 2. Trace the superficial lymphatics of the upper extremity to their termination. 3. Internal saphenous vein: *Give* origin and termination, name its tributaries and veins it communicates with in its course. 4. Describe the knee joint, give blood and nerve supply and actions. 5. Describe the prostate gland and give its anatomical relations. 6. Give source and distribution of the nerves of the palm of the hand. 7. What important parts lie behind the sterno-clavicular joint? 8. Superior mesenteric artery: Give origin, course and parts supplied. Name its branches. 9. In amputation, three inches below the head of the fibula, what arteries are divided? 10. Describe the elbow joint.

PHYSIOLOGY

1. Name the cranial nerves that are exclusively motor. 2. State the functions of the sympathetic nervous system. 3. Name the structures involved in a knee jerk, and state the physiology of such a reflex action. 4. Describe a white blood cell. Where are they formed and what is their function? 5. Name the factors which produce the flow of blood in the veins. 6. Describe briefly the digestion of a meal consisting of bread and butter, beef steak and a cup of sweet chocolate. 7. Give the composition of normal urine. 8. Name the functions of the bile. Give its constituents. 9. What is ciliated epithelium? Where is it found and what is its function? 10. What constitutes the lymphatic system? What forces cause lymph to circulate?

CHEMISTRY

1. What is analytical chemistry, and what is the object of qualitative analysis? 2. Mention the general physical and chemical properties of urine. 3. State the general properties of organic compounds. 4. Describe the processes of fermentation and putrefaction. 5. Explain the terms, reaction and reagent. 6. Explain the process of respiration, from a chemical viewpoint. 7. What is ozone, and how does it differ from common oxygen; under what circumstances is ozone formed? 8. Illustrate by formula the difference between ferrous and ferric salts. 9. Enumerate the metals, salts of which are frequently employed in pharmacy. 10. State the laws of constant and reciprocal proportions.

HISTOLOGY—PATHOLOGY—BACTERIOLOGY

1. Name six fixing fluids. Give formula and uses. 2. Describe the preparation of permanent specimens. 3. Give life history of

blood-cells circulating in the blood-current. 4. Differentiate leukemia and pseudoleukemia. What characterizes a true leukemia? 5. Define edema. Name varieties and causes. 6. Describe abnormal heart sounds. Give causes and varieties. 7. What diseases or conditions cause respiratory disturbances? 8. Describe the colon bacilli group and diseases caused by them. 9. Describe yeast. 10. Name sources, varieties and effects of bacteria in milk.

MATERIA MEDICA AND THERAPEUTICS

1. Podophyllum. Give official name, active principle, dose, properties and uses. 2. Glyceryl trinitrate. Give official name, dose, properties and uses. 3. Digitalis. Give official name, dose, properties and uses and preparations. Write a prescription containing digitalis for an adult. 4. Give official name, dose, properties and uses of three mercurial preparations. 5. Give official name of calcium chlorid. Dose, properties and uses. 6. Aspirin. Official name, dose, properties and uses. 7. Aconite. Official name, dose, properties and uses. Antidote for overdose. 8. Give etiology and treatment of rachitis. Write a prescription containing phosphorus for a child. 9. Describe the treatment of a case of sunstroke. 10. Ichthyol. Describe. Give dose, properties and uses. In what form would you apply it locally? Write a prescription for same.

HOMEOPATHIC MATERIA MEDICA AND THERAPEUTICS

1. Differentiate nux moschata and asafetida in hysteria. 2. Differentiate three remedies in follicular tonsillitis. 3. Give treatment for carbuncle. 4. Give treatment for acute uremia. 5. Describe the cough of puls and drosera. 6. Differentiate eupatorium and gelsemium in grip. 7. Name three remedies having aggravation after sleep; after motion; in dampness. 8. Give indications for two remedies in enuresis. 9. Prescribe for: Constipation, with no desire for stool. Rectum seems sluggish; difficult to expel even a soft stool; stools hard, knotty and scanty. 10. Prescribe for: Headache increasing through the day; bursting pain; worse from sneezing or coughing; coated tongue; thirst; gastric derangement.

PRACTICE (DIAGNOSIS) OF MEDICINE

1. Describe only the prodromal symptoms, giving duration of each, in (a) measles; (b) scarlet fever; (c) chicken-pox, and (d) small-pox. 2. Name five diseases in which the ophthalmoscope is an important aid to diagnosis, giving reasons therefor in each. 3. Define the terms "contagious," "endemical," "epidemical" and "pestilential," and name two diseases in each class. 4. Differentiate sunstroke, cerebral hemorrhage and alcoholic coma. 5. Describe four murmurs of the heart, giving name, cause, and state where each is best heard. 6. Name three causes for specific gravity of the urine (a) under 1010, and (b) over 1030. 7. Differentiate hepatic, intestinal and renal colic. 8. How much, what and how often would you feed a two-months' old bottle-fed infant? 9. Describe a typical case of acute lobar pneumonia in its different stages. 10. Define bronchial breathing. Where is it heard normally? What does it signify when heard elsewhere?

SURGERY

1. Define hernia. 2. Give symptoms and treatment of ulcer of pylorus? 3. Give indications and technic of operation for ligation of common carotid artery. 4. Differential diagnosis between fracture of upper end of radius and posterior dislocation of ulna. 5. What is varicocele? How would you treat it? 6. Give causes of retention of urine. Give treatment for one cause. 7. Give differential diagnosis between abdominal ascites and a large ovarian cyst. 8. Give technic of paracentesis thoracis. 9. Give diagnosis and treatment of phlebitis. 10. Describe the operation for empyema.

OBSTETRICS AND GYNECOLOGY

1. Give three causes for post-partum hemorrhage, and describe your procedure for its control in each case. 2. Give symptoms of threatened eclampsia; of actual eclampsia, and of death of the fetus. 3. What is ectopic gestation? Give its symptoms and its course. Differentiate it from ovarian tumor. 4. What is dry labor? How does it differ from normal? What are its dangers? 5. Given a woman in the eighth month of pregnancy, with uterine hemorrhage and increasing exhaustion. Describe your examination of the case; a condition you would find; your diagnosis, and your management of the case. 6. How would you diagnose left-occipito-anterior position; transverse position; breech presentation and face presentation? 7. What is asphyxia livida and asphyxia pallida? Give treatment. 8. Give causes, symptoms, appearance and dangers of cervical tears, and describe briefly the chief steps in an operation for their repair. 9. Describe and give uses or advantages of the following positions: Sims', Walcher's, knee-chest and lithotomy or dorsosacral. 10. Name three conditions which cause a vaginal discharge; give characteristics of each discharge, and give other symptoms which would differentiate the conditions.

HYGIENE

1. Mention the various methods of house heating, and state which you consider the best for our temperate climate. 2. State a suitable temperature for a sick room. 3. In pneumonia, how would you ventilate the sick room, and at what temperature would you advise it to be kept? 4. Differentiate between a serum and a vaccine; define natural and artificial immunity how may the latter be produced. 5. For what conditions would you examine a child in order to determine the causes of inefficiency in school work? 6. What would be your method of procedure in rendering a malarial district healthful? 7. What prophylactic treatment would be necessary for those who were undertaking this work?

JURISPRUDENCE

1. Name some of the violent causes of death. 2. How can you differentiate them? 3. What post-mortem findings would lead you to believe death to be due to H.NO_3? H9.CZ_2? [*Sic.* Is this a catch question or a misprint? There were at least fifteen other typographic errors in the original copy.—ED.] 4. How would you determine whether a woman was pregnant or not? 5. How might such a question affect an individual from a legal standpoint?

Book Notices

CLINICAL SURGICAL DIAGNOSIS FOR STUDENTS AND PRACTITIONERS. By F. de Quervain, Professor of Surgery, University of Basle. Translated from the Fourth Edition by J. Snowman, M.D. Cloth. Price, $7 net. Pp. 779, with 514 illustrations. New York: William Wood & Co., 1913.

If this work were to be described by a single word, that word would be "practical," as the effort of the author throughout has been to present the subject of diagnosis in the most practical manner, eliminating much that perhaps is of scientific interest but as yet of little clinical value. One is constantly reminded that it is a living patient with whom the surgeon has to deal and that the chief aim of diagnosis is proper treatment. This is well illustrated by the following sentences from the discussion of intestinal obstruction: "There is no object in being able to proclaim at the autopsy that we had correctly diagnosed the situation and nature of the obstruction. Our main object must be to diagnose when surgical relief should be offered, although we may not always know the precise position and character of the obstruction."

After presenting the subject in detail the author has the happy faculty of epitomizing or drawing a short conclusion containing the pith of the matter which is easy to remember. For instance, with reference to injuries of the brain we find this: "The following conclusion may be drawn for the diagnosis of contusion of the brain. A patient who, immediately after an injury to the skull, manifests brain symptoms which persist for a whole day and which do not fit in with the signs of a gradually increasing cerebral pressure, has sustained a contusion of the brain in the widest sense of the term. This view is supported by the presence of irritative or localizing symptoms arising from cortical areas of ascertained function. It is definitely confirmed by a persistent rise of temperature which cannot be explained by infection from without."

The method pursued by the author in arriving at a diagnosis is to reason from the symptoms to a conclusion either on positive evidence or by exclusion, rather than to assume a definite condition and arrange the symptoms to fit the condition. While technical methods are not omitted, the author has "employed those methods of investigation which are available for the general practitioner, or at any rate, which can easily be carried out for him." The illustrations, which are numerous, are quite good and almost all of them are taken from the author's own cases.

PROTEIN SPLIT PRODUCTS IN RELATION TO IMMUNITY AND DISEASE. By Victor C. Vaughan, M.D., LL.D., Dean of the Department of Medicine and Surgery of the University of Michigan, Victor C. Vaughan, Jr., M.D., A.B., Junior Attending Physician to Harper Hospital, Detroit, and J. Walter Vaughan, M.D., A.B., Junior Attending Surgeon to Harper Hospital, Detroit. Cloth. $3 net. Pp. 476, with illustrations. Philadelphia: Lea & Febiger, 1913.

This is a compilation and summation of the work which has been carried on for many years in Vaughan's laboratory at the University of Michigan. As is well known by those in touch with the progress in infection and immunity, this work began with a study of the composition and disintegration products of bacterial cells, which led to the finding of certain toxic and non-toxic products that were afterward learned to be obtainable also from proteins of all sorts. Out of this work, which incidentally yielded many items of value concerning bacterial chemistry, came also knowledge of changes which take place in foreign proteins within the animal body, whether these foreign proteins are bacterial cells, injected serums or food proteins. The ideas and results thus obtained preceded much of the modern investigation of protein sensitization and intoxication —that is, anaphylaxis or allergy. Vaughan is recognized as one of the pioneers in this most important line of progress, his work having been of particular value because it approached the subject from the chemical side at a time when practically all the investigation was solely by animal experiment. The conception of anaphylaxis as an intoxication with the products of protein disintegration, formed through the action of specific ferments developed as a biologic reaction to the foreign proteins and an integral part of the scheme of immunity to

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